



**NORTHWEST OIL DRAIN
SUMMARY OF AMOCO DOCUMENTS¹**

1. **Letter to Utah Oil Refining Company from the Salt Lake County Recorder - September 12, 1922.**

Regarding an agreement between the parties that allows Utah Oil Refining Company to deposit "drainage water category oil refuse" into Salt Lake City's oil drainage canal.

2. **Agreement between Salt Lake City and Utah Oil Refining Company - September 12, 1922.**

This agreement allows Utah Oil Refining Company to drain water carrying oil refuse into the drainage canal.

"It is further understood and agreed that if part of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further understood and agreed that party of the second part shall hold party of the first part harmless for an on account of any damages which may be assessed against it in any court proceeding, or otherwise, on account of the discharge into the Great Salt Lake of any oil or other refuse which may be carried or discharged through said drainage ditch coming from the refinery and environs of said party of the second part.

It is further agreed for the same considerations herein above mentioned, that the party of the second part shall have right to discharge into the present sewer system of the first party, pending the completion of said drain canal not to exceed 300,000 gallons of its waters from its refinery per day."

3. **Utah Oil Refining Company letter to Mayor and Board of Commissioners, Salt Lake City, UT - July 10, 1922.**

"In view of the fact that there has been considerable complaint on the part of the new state gun club that the water which we are discharging into the 7th West street ditch which finds its way into the Jordan River contains a considerable amount of refuse oil, which according to their statements is causing serious damage to their duck club grounds and in order to permanently avoid discharging this water into the Jordan River we desire to submit the following proposition to the city. . ."

¹For purposes of this summary, Utah Oil Refining Company, Salt Lake Refining Company, American Oil and Husky Oil Company are presumed to be Amoco's predecessors in interest. This assumption needs to be verified by further research.

4. **Letter from City Recorder to City Engineer - September 13, 1922.**

Contains of the executed copy of an agreement between Utah Oil Refinery Company and the City.

"It is further understood and agreed that party of the second part [referring to Utah Oil Refining Company] shall hold party of the first part [Salt Lake City] harmless for and on account of any damages which may be assessed against it in any court proceeding, or otherwise, on account of the discharge into the Great Salt Lake of any oil or other refuse which may be carried or discharged through said drainage ditch coming from the refinery and environs of said party of the second part.

It is further agreed that in consideration of said payment to be made as aforesaid, party of the second party may discharge, not to exceed 300,000 gallons daily of its waters from its refinery into the sewer of said first party pending completion of said canal."

5. **Letter to Commissioner of Streets and Public Improvements from Acting City Engineer - January 20, 1926.**

"The agreement with the Utah Oil & Refining Company for use of the Channels in carrying waste water away stipulates the following payments: \$5,000.00 on demand at the beginning of the work; \$5,000.00 three months after the first payment; \$5,000 three months after the second payment and \$5,000.00 three months after the third payment, or a total of \$20,000.00. The City has no agreement with either the OSL or D&RGW railroads relative to this drainage."

6. **Letter to Commissioner of Streets and Public Improvements from Acting City Engineer - January 25, 1926.**

"For a number of years the Utah Oil Refining Company has been discharging into the gravity outlet sewer, about 300,000 gallons of water from its refinery per day.

It is stipulated in the agreement dated September 12, 1922, that the refining company may discharge this quantity of water into the sewer pending the completion of the drain canal. Inasmuch as the canals are now completed, I would recommend that the Board of Commissioners instruct the Utah Oil Refining Company to divert the discharge from the Gravity Sewer into the drainage canals."

7. **Letter from S. Tanner to H. C. Jessen - August 2, 1926.**

#11 "[T]he drainage channel carries the oil, and refuse from the Utah Oil and O.S.L. [Oregon Short Line] North Yards to the lake where formerly the oil was turned into a slough near the center of Sec. 10, and during high water this oil was spread over the land making a menace to this section of the country."

....

"The information regarding the oil being turned into a slough was taken from Snyder's report."

8. **Letter from City Engineer to Mr. Sumner G. Margetts - July 1, 1940.**

"Regarding the syphon in the Northern part of the city, which carries the sewage across the river, it is provided with gates which are occasionally used for flushing the oil which gathers in the canal ahead of the syphon, through the syphon.

A few years ago this oil that accumulated ahead of the syphon was ignited in some way by mischievous boys roaming in that vicinity causing considerable damage to the concrete and warping the gates. The warped condition of the gates and holes in the gates due to erosion and rusting allowed some leakage, but not enough to cause any alarm."

9. **Report "Measurement of Quality of Sewerage," Sept. 26, 1945.**

[p.2] "High cost of the structure, interference from the gates at the underpass, inaccessibility, and the measurement would include undesirably surface run-off from these flats and oiled water from the Utah Oil Refinery."

10. **Report on Sewage Disposal, Greeley and Hansen Engineers - December 4, 1947.**

[p.19] "Utah Oil Refining Company. An inspection visit was made to the Utah Oil Refinery, August 20, 1947. Mr. Hugh Thompson, Chemical Engineer, answered questions and showed us around.

- Three drainage lines flow west from the refinery grounds. One drain, Drain No. 3-D, near the North end, originating at Gambusia Rearing Ponds, is supposed to be entirely enclosed and to receive no wastes as it crosses the plant site.

Two pipelines discharging into Drain No. 3, just north of 9th North Street carry most of the waste drainage from the refinery. One pipe carries mainly condenser and cooling water. The other pipe takes the effluent from an oil separator comprising 4 tanks each 37x10x4 feet deep equipped with mechanical sludge collectors and oil skimmers of the endless chain type. Casual observations during the inspection trip seemed to indicate a very low operating efficiency for these tanks. The effluent was quite dark and had considerable oil in it.

Observations in the draining ditch at the point of discharge also indicated that considerable oily material was being discharged.

....

The wastes contain upward of 700 parts per million of chlorides, as much as 1,300 parts per million of suspended solids, and have a pH ranging from 6.9 to 8.2.

Drain No. 3 flows northwesterly into city Drain No. 2 which eventually enters the open outfall sewer just above the Jordan River syphon.

In addition to the foregoing, there are two additional items of waste products:

(a) Lime sludge from a water softening plant which is hauled away, although the filter backwash water carries considerable into the drains.

(b) Spent Acid -- sulfuric acid -- some losses into drains, but most of this acid waste is hauled to a dump in field pits. It is rumored that much of the spent acid is dumped directly into drainage lines near the open outlet sewer. This causes odor troubles."

11. **Letter to Mr. J. B. Matheson, Commissioner, from C. E. Finney, Jr., President, Salt Lake Refining Company -- Sept. 13, 1948.**

"You will note that the key plot plan on this drawing shows the location of the existing drainage ditch into which we plan to discharge our separator effluent and surface water runoff. As covered in our oral discussion, we do not believe that the small amount of process and sanitary effluent which we will discharge (less than one second foot) will noticeably increase the flow in the Salt Lake City sewer canal.

May we have the approval of the Salt Lake City Corporation to discharge our refinery effluents and surface drainage in the manner shown on this drawing."

12. **Preliminary Report on Drainage Pipelines for Northwest Part of City - November 14, 1949.**

"The area beginning at 4th West and 5th North Streets and extending northerly into Davis County and Westerly to the Jordan River, is crossed by a number of open drains which carry storm water, warm sulfur water, wastes from Union Pacific Railroad shops, waste water from ice loading plant at 4th North and 4th West, wastes from Utah Oil Refining Company

The area of 9th North and west of 8th West is being considered for extensive development, which means that troublesome waste now being carried in open drains must either be excluded from the drains or carried in pipelines to a point beyond the expected development.

....

The Sulphur water and oily wastes must be carried in a pipe which will not be disintegrated by their chemical action.

....

[p.3] Pipeline No. 2. This pipeline will carry wastes from the U. P. Railroad Shops, waste from the Utah Oil Refining Company, [and] sulphur water wherever intercepted. . . ."

13. **Letter from City Engineer to Honorable John B. Matheson, Commissioner of Streets and Public Improvements - November 28, 1949.**

"In connection with our "Preliminary Report on Drainage Pipe Lines For Northwest Part of City" submitted to you under date of November 14, 1949, the following additional information is submitted to you.

(1) Flow from Utah Oil Refining Company, furnished by Mr. Clark on November 26, 1949. Flow from the refinery 800 to 1100 gallons per minute (1.8 to 2.5 cfs.) Upstream from refinery discharge point, 800 gallons per minute, more or less (1.8 cfs). Refinery requirement four to six 6 cubic feet per second.

(2) Flow from Union Pacific Railroad shops, furnished by Mr. Godfrey on November 26, 1949. Combined flow 1.4 cubic feet per second. Maximum capacity required 3 cfs.

. . . .
Based on the meeting held in your office November 14th, a pipe line to carry wastes of sulphur water, some storm water, railroad and refinery oily wastes and ice plant water would start on 7th West near 9th North and run westerly and northerly to a point 4,000 feet north of 9th North. The data are as follows:

. . . .
Discharges as follows:
U.P.R.R. - 3.0 cfs.
Utah Oil Co. - 6.0 cfs."

Proportionate costs would be as follows:

Ice plant	6.7%	\$14,070.00
City	33.3%	59,930.00
U.P.R.R.	20.0	42,000.00
Utah Oil	40.0	84,000.00

14. **Letter to Roy McLeese, City Engineer, from M. N. McKendrick, Assistant Engineer of Sewers - January 19, 1950.**

"Attached is a letter and prints from the Salt Lake Refining Company addressed to Commissioner John B. Matheson in which the Company requested permission to discharge separator effluent, surface water runoff, and sanitary effluent into the Salt Lake City drain canal.

. . . .
An agreement was executed by the City with the Utah Oil Refinery Co. in 1922, for the City to receive refinery waste waters in the same canal into which the Salt Lake Refining Company is discharging their wastewaters.

Since there is no apparent reason for the City to deny the refinery request, it would seem desirable to have a meeting with Salt Lake Refining Company representatives . . . to formulate an agreement which can be prepared by the City Attorney for the City to receive

discharge water for the Salt Lake Refining Co. into the City drain canal adjacent to the refinery."

15. **Letter from City Engineer to Mr. C. E. Finney, Jr., President - Salt Lake Refining Company - February 8, 1950.**

"It has been called to my attention that your company submitted a request for permission to discharge separator effluent, surface water, runoff and sanitary effluent into the Salt Lake City drain canal, September 13, 1948.

I find there has been no action taken on this matter by the Salt Lake City Commission, however, I am informed that you have availed yourself with this drainage canal."

16. **Preliminary Report, Pipeline for Stormwater, Industrial Wastewater North of 9th North Street - July 1950.**

"The capacities [for proposed pipe line] provided are as follows:

Utah Oil Refinery	-	6 cfs
Union Pacific Railroad	-	3 cfs

17. **Letter to Mr. J. B. Davis, Chief Engineer - Utah Ice and Storage Company - October 2, 1950.**

"Regarding discharge of wastewater from your Union Pacific Plant into open drain ditch in a ditch running North along Fourth West Street and eventually finding its way to our main outlet drainage system through the Northwest section of our City in a ditch jointly used by the Union Pacific Railroad Company, Utah Oil Refining Company, and the City storm drainage.

Since the development of homes up to Ninth North Street and with future proposed development north of this area, a new drain line will have to be built to take care of the waste drainage, particularly north of Ninth North Street. The present open drain in this area is at present a nuisance [sic] and emits very pungent odors."

18. **Document - October 13, 1950.**

"At the meeting held October 10, 1950, it was agreed that a new proposal will be prepared based on eliminating Utah Ice and Storage Company water. . .

Revised capacities provided will be:

		%48"	%54"
Utah Oil Refining Co.	6 cfs	13.95	11.54
Union Pacific Railroad	3 "	6.98	5.66
City	34 and 43 "	79.07	62.69

19. **Letter to Mr. Roy McLeese, City Engineer, from Assistant City Engineer - May 23, 1951.**

"Regarding changing of and piping waste water ditch in the vicinity of Ninth North and West of Seventh West, which has been causing so much trouble with oil and fumes from discharge waste, particularly from the Utah Oil Refining Company and the Union Pacific Railroad Company.

In making a study of this situation it is now suggested that the ditch be enclosed in a 42" diameter reinforced culvert pipe All pipe to be coated with an acid resistant coating inside and outside .

. . . .
The building of this line entails a great deal of expense and as tentatively agreed in past meetings the costs shall be borne by the organizations causing the nuisance. A tentative estimate has been prepared and is attached hereto. [not attached]"

20. **Letter to Honorable Joe L. Christian, Commissioner, from City Engineer - May 25, 1951.**

Discussing same pipe line as above, apportions costs as follows: Utah Oil Refining Company - \$43,711.77, Union Pacific Railroad Co. - \$21,855.88, Salt Lake City - \$24,219.85.

21. **Letter to Mr. F. C. Paulson of Union Pacific and Utah Oil Refining Company, from City Engineer - August 14, 1951.**

"Because of the obnoxious odors, the fine spray of oil on adjacent houses on 9th North Street in the vicinity of this ditch, numerous complaints were received by the City and something must be done to correct this condition. We have discussed this matter and feel that those causing the nuisance should pay proportional costs and further that the work shall be done as soon as possible.

The nature of the waste drainage from the Utah Oil Refining Company will necessitate the painting of the pipe to limit the attack on the concrete pipe

Estimated cost of project	\$89,787.50
Less cost of painting interior of pipe	\$4,060.00
	\$85,727.50

Divided as follows:

Utah Oil Refining Company	1/2 + cost of painting	\$45,923
Union Pacific Railroad	1/4	\$21,431
Salt Lake City Corporation	1/4	\$21,431
		\$85,727.50

22. **Letter to Union Pacific Railroad from City Engineer - March 11, 1952.**

Discussing meeting regarding "serious problem confronting Salt Lake City in the matter of eliminating an existing nuisance created by the type of waste now flowing in this open ditch, in which waste originates from the Oil Refinery and the UPRR Co. shops area. This created nuisance and accompanying odors are the source of many complaints from property owners in the area and we feel that something must be done soon."

23. Agreement between Salt Lake City and Utah Oil Refinery Company - August 1952.

"Whereas it now appears that numerous and diverse residents living west of the oil company's property nearby the aforementioned drain are complaining that fumes and disturbing odors are carried into their homes to the annoyance and discomfort of all concerned, and said residents are threatening to sue to have the oil company enjoined? from continuing to transfer the waste materials from its refinery through an open channel. . " They agree that the City will construct an underground pipeline.

"It is further understood and agreed that the party of the second part [Refinery] shall hold the party of the first part [Salt Lake City] harmless for and on account of any damages which may be accessed against it in any court proceedings on account of the discharge from the underground channel into the open canal or drain, or discharging the same into the Great Salt Lake."

24. Letter to Union Pacific from City Engineer - August 14, 1952.

"In reviewing the situation further . . . trying to cut costs in every way possible. The Utah Oil Refining Company has agreed to participate [sic] in this work to the amount set up in the estimate submitted providing the City would stand the cost of engineering and would eliminate the cost of connecting drain line

....
Figuring on the same proportional cost as estimated the Utah Oil Company's cost amounts to \$41,790.15; the Union Pacific Company's cost would be \$18,865.08, the City of Salt Lake cost would be \$29,132.27. Total cost is estimated at \$89,737.50."

25. Memorandum to Honorable Mayor Ted Wilson from Councilman Ronald Whitehead -- Subject: Summary of File 47-D-2 City Engineer

Good summary of previously discussed documents. Also, has at the bottom a list of industries using the drainage system. "Incomplete: Jordan Fur and Reclamation, Utah Refining Company, Utah ice and Storage Company, Union Pacific Railroad, Cudahy Packing Plant, Salt Lake Refinery, Oregon Short Line Railroad, Old Copper Plant, and others yet to be discovered."

26. Right-of-Way and Easement for Sewage Pipelines

"Grantee, American Oil Company, agrees to indemnify, protect and save harmless Grantor from and against any and all loss of or damage to the property of Grantor and from and against any and all loss of life or property or injury or damage to the person or property of

any third person from or corporation, and from and against any and all claims, demands, or actions for such loss, injury, or damage and any costs or expenses in connection therewith caused by or resulting from the installation, operation, and maintenance of said sewer pipelines whether caused in whole or in part by the fault, failure or negligence of Grantor and its agents or employees."

27. Water Quality in the Sewage Canal, May 1976.

"The Sewage Canal System evaluated in this study is made up of three canals: (1) sewage canal, (2) oil drain, (3) city drain. The Oil Drain and City Drain are tributary to the Sewage Canal. . .

....

[p.2] Discharge from the Chevron Oil Refinery lagoons has a low flow (estimated at 0.7 cfs), but significant concentrations of coliform bacteria, BOD, and oil and grease (according to their discharge permit of May 20, 1971).

....

Major diffuse source of pollution is probably the oil-saturated fill material forming the channel for the upper reaches of the oil drain. Oil rich sludge deposits that built up over the years in the lower reaches of the oil drain and in the city drain below the Salt Lake City Airport drain. These deposits apparently provide a source of oil loading to the system.

....

[p.10] 5. Storm drain discharging to the oil drain near Station 16 (corrugated steel pipe).

The Union Pacific Oil treatment plant near 5th North at one time discharged to a small stream originating in that vicinity. The stream eventually flows into the oil drain above Station 10. Union Pacific now discharges to the sanitary sewer for treatment by Salt Lake City WWTP.

American Oil (Amoco) discharges to the sanitary sewer for treatment by Salt Lake City.

Husky Oil Company at one time discharged to a lagoon located just south of Cudahy Lane. They are currently discharging directly to the sanitary sewer for treatment by the South Davis WWTP.

....

The water in the upper reaches of the oil drain runs over oil saturated fill. The bottom muds from Station 16 to the point of effluent discharge from the SLC WWTP are black and saturated with oil."

Report also contains much information on dissolved oxygen, BOD, organic carbon, oil and grease, various organic and inorganic compounds found in the water at various testing stations.

28. "Is the Rose Park Sludge Dump Another Love? Canal" by Dave Nelson - Undated (probably early 1980s).

Part of which says,

"Several industries in the area made access to these canals and their wastes combined with the sewage to eventually discharge into the Great Salt Lake. These industries included oil refineries, a rail yard, and a tannery, heavy metal salts, i.e. chromium, selenium, etc. These canals often caught fire sending dense black smoke along the Wasatch Front."

29. **Interim Status Report: Rose Park Sludge Dumping Canals, by Margot Nelson - date stamped December 9, 1980.**

"The Rose Park sludge dump was used for disposal for refinery sludges and residues from the 1920's until 1957, when Salt Lake City bought up the land, purchase was in response to residents' complaints against the dumping."

30. **Field investigations of uncontrolled hazardous waste sites, FIP Project OVA Report, Rose Park and Canals - November 25, 1981.**

Among other things, talks about the results of Amoco monitoring wells, several peaks in benzene, methane, and some other things. Also, in section labeled "Rose Park Storm Drainages" states:

"Locations of the storm drains are shown in Figure 2. Gasoline odors were detected by the OVA survey team. The OVA chromatograms recorded three peaks. Two were identified as benzene and methane. Third unidentified peak typical of gasoline, volatiles is thought to be octane. These volatile emissions were probably a result of the Amoco products spill which occurred on May 1981.

31. **Letter to Margot Nielson, EPA - Region VIII from E. J. Sullivan at Amoco - June 2, 1982.**

"Attached are tables giving results of analyses on samples of oil and sludge from in and around the former dump site in Rose Park. The two sludge samples were collected last August . . .

....

We intended, by these tests, to show that the material in the old canal was different from the material in the sludge pit, and that it was probably diesel lube draining from the railroad shops in the area. The data leave little doubt that all three materials are different, but they are not as conclusive as we had hoped in identifying the oil from the canal. Moreover, some of the data suggests the oil in the canal could have originated in the railroad shops. During the period that the canal was an actual surface drain, diesel lubricating oil additives contained barium, phosphorus, and sulfur. The oil sample from the canal contains all three of these elements. Concentrations of barium and phosphorus are significantly larger than in the sludge pit samples. Sulfur in the sludge pit samples ranged from about 25 per cent to nearly 150 per cent greater than sulfur in the canal oil. High sulfur will be expected in the sludge pit material since it is believed to be largely residue from the sulfuric acid treatment of light petroleum products.

One other metal in the canal oil that may be significant is lead at 360 ppm. Railroad journal-bearing lubricants are rich in lead salts, so the presence of lead in the oil further suggests a railroad operation as the source.

....

Simulated distillation show that all samples have portions boiling in the lubricating oil/gas oil range.

....

Diesel lube stocks actually contain a significant portion boiling above 1,000 degrees Fahrenheit. These stocks are principally SAE 40 and SAE 50, which, as Appendix A shows, contain on the order of 15-25 percent hydrocarbons having 44 or more carbon atoms, and which boil in the 1,000+ degree F range."

32. Abstractor Sheet - November 20 1984.

"Information required: Find ownership of oil drain or canal sewer." Mentions grant by American Oil Company to Salt Lake City in the Abstract Record, July 29, 1963.

33. Sampling Plan, Rose Park Canal, Salt Lake and Davis Counties, Utah - September 9, 1989.

[p.3] Prior to the closing of the Oil drain canal in the Rose Park area in the early 1950's, the canal received industrial waste most notably from Utah Oil Refining Company and the Union Pacific Railroad yards

....

Materials of concern are organic, oily and sewer waste sludges deposited directly into the canals. . . . An approximately 2 feet thick layer of dark oily sludge at a depth of about 4 feet has been documented at locations in Rose Park atop or adjacent to the Oil Drain canal. Sample analyses of the sludge indicate high concentrations of organics and metals, especially lead.

....

[p.4] [T]he large oil drain canal was constructed [in the 1920's] to transport wastes further northward and deposit them in Farmington bay of the Great Salt Lake. This canal is still in use, although it has apparently been rerouted over many stretches. Complaints and concerns from residences of the newly constructed Rose Park Subdivision in the early 1950's caused the use of the canal to be discontinued in the area of Rose Park and resulted in plans to build a pipeline to transport the waste to a location further north in the canal. The costs for construction of this pipeline would be shared by Salt Lake City, Utah Oil Company and Union Pacific Railroad, based on their use of the canal."

34. Unsigned Note, Interview with Meryl Anderson - June 25, 1990.

Mentions Amoco gas spill of 1983. The next page, apparently a continuation of the same memo, says:

"Jason, this lady would like to have a sample taken in her yard, as she has had problems with Amoco oil lines and with water line breaks. Feels like you will be able to get a good sample from her property."

35. EPA Fact Sheet, Rose Park Sludge Pits Superfund Site - January 1992.

Site Background:

"The Rose Park Sludge Pit was used as the disposal site for acid waste sludge from refinery operations at the Amoco Oil Company Refinery from the 1920's until 1957. Salt Lake City purchased the property in 1957. In 1976, a bull dozer being used for expansion of park facilities broke through soil covering the sludge and exposed acid waste sludge."

36. Incident Report - November 9, 1995.

"On November 9, 1995, the Salt Lake City Water Reclamation Plant reported a petroleum odor invisible sheen on the canal that is adjacent to the treatment plant. Salt Lake City Public Utilities Drainage Division traced the draining system to Union Pacific yard. On November 11, 1995, Salt Lake City notified the Health Department of the release. On November 17, oil was pumped out of a manhole in the storm drain line on the Union Pacific Yard and the box was grouted.

...

Amoco Oil and Union Pacific agreed to cooperate in an effort to locate the source of petroleum release."

37. Incident Report - First reported February 23, 1996.

"Chevron, Amoco Oil incident was the most severe case for pollutants entering Salt Lake City's Municipal separate storm sewer system in the waters of the state. Incident was reported to DEQ on February 23, 1996, by representatives of Chevron and Amoco. A pin-hole sized leak was found in a 4-inch pipe, three and one-half miles underground, that transfers high sulfur fuel from Amoco to Chevron. Crews found the leak near 900 North and I-15. Repairs are completed. Leak migrated into a drainage canal that eventually empties into the Great Salt Lake." Also describes cleanup.

38. Conceptual Plan for Remediation of Soil and Groundwater Contamination, Warm Springs Road Low Sulfur Diesel Supply Line, Chevron - March 5, 1996.

"On Friday, March 2, 1996, Chevron U.S.A. Products Company was informed by Amoco Oil Co. that a pipeline supplying low-sulfur diesel from the Chevron Salt Lake Refinery to the Amoco Refinery may be leaking." Then describes emergency response by Chevron.

39. Letter to Robert Barnes of DEQ from Joe Naccache of Amoco - April 15, 1996.

"This letter is to report to you Amoco's and Union Pacific's plans to stop the infiltration of groundwater contaminated with hydrocarbons into the city storm sewer located on

Union Pacific's rail yard. Union Pacific and Amoco are jointly responding to this emergency."

40. Notes of meetings between Randy Petersen, Richard Flores, and Jerry Gordon.

November 9, 1995

Discussion regarding petroleum smell in manhole in Box 5 and sampling done at a manhole located north of 9th North. This manhole turned out to be part of Amoco's collection system that conveys to the Salt Lake City collection system and ultimately to the POTW.

November 15, 1995

The collection system for the treatment process relating to Amoco/Union Pacific area was discussed: "...all parties agreed that the problem was in the line that runs through the Union Pacific yard."

41. Letter from Craig W. Anderson to Joe Naccachi, Craig Morris of Amoco, and A. H. Jensen of Union Pacific - December 15, 1995.

States that the petroleum release was first reported on November 9, 1995 and on November 17, 1995 oil had to be pumped out of a manhole in the storm drain line.

"Following the release, both Union Pacific and Amoco performed independent laboratory analysis of samples taken of the release. Based upon our discussion, it is my understanding that the analytical results are inconclusive regarding the exact source of the release.

....

Amoco and Union Pacific agreed to cooperate in an effort to locate the source of the petroleum release and your respective consultants will work together and share any relevant existing information which may assist in the identification of the source."

42. Summary-To-Date, Oil Contamination Site on Union Pacific Property, Jan 24, 1996.

Gives a chronological time line of reporting and cleanup measures for November 1995 spill on Union Pacific property.

43. Salt Lake Tribune article - March 3, 1996.

"Up to 50,000 gallons of diesel fuel have been leaking into an industrial storm drain near 800 West and 800 North since Feb. 21

....

'This has been going on, giving everybody headaches, for years.' Diamonte said. 'All we know is that it is diesel, similar to what the nearby rail yards lose.'"

44. **Fax from Shelly Cordon Teusher of Amoco to Jeff Niermeyer of Salt Lake City - March 4, 1996.**

"Chevron and Amoco, in conjunction with the appropriate federal, state, and local agencies have located the source of a petroleum hydrocarbon release to a storm drain canal in northwestern Salt Lake County. According to Chevron officials, the leak occurred in the company's 4-inch low sulfur diesel line between the Chevron and Amoco refineries. Line is located near Warm Springs Road. Throughout the incident, Chevron and Amoco worked cooperatively in a unified manner to expedite efforts to locate the source."

45. **Results of Investigation, 4/1/96**

"3) The next two boxes were located to and west of the Amoco facility located on 900 north and 500 west. These two boxes are on Amoco's storm drain system that flows into their treatment system. The odor was one of "gasoline" and not the characteristic "diesel" smell.

....

6) We then asked the UPRR representatives about an "oily" Box that Ray and Wes had observed previously. They indicated that it was an abandoned line that used to serve the machine shops to the north and that it now drained into their collection system and did not tie into the storm drain across their property.

....

12) "Box 7," located just east of the UPRR "wheel facility" and south west of Amoco's diesel storage tanks (#156 and #157), showed a rainbow sheen with a odor of diesel and some visible free product. UPRR indicated that the closest source of diesel to the box on UPRR's property was the engine fueling rack, located approximately 1000+ feet south of Box 7. . . . The UPRR individual also indicated that at one time there was a discharge from the fueling facility that according to Craig Morris of Amoco showed up in Box 7. They did not dispute Craig's indication.

....

13) The next stop was at a box not shown on the Amoco map, dubbed "Box 7 1/2." The sheen in this box was increased, with a stronger odor and more visible product. It was noted that this box or Box 7 used to be connected to the storm sewer line that runs through Amoco's property, and was connected at a still visible elevated sewer box on Amoco's property near Monitoring Well MW-26 on the map.

14) The last stop on this line through UPRR property was at "Box 8" where the odor was very strong, the sheen dark purple with a pronounced rainbow. The longer it was observed at approximately 1645 hours, the heavier the sheen became. Possible sources that could be producing the sheen and free product were discussed, however, no firm conclusion was made."

46. **Deseret News article - May 9, 1996.**

Describes a gas leak which allowed leakages of fuel into the drainage ditch. Chevron seemed to be the responsible party, but Amoco also worked with Chevron to uncover the problem. The leak was located near 2600 North and about 2000 West.

47. Letter from J.E. Naccache, Amoco, to Joyce M Ackerman, EPA, June 6, 1996.

Describes hydrocarbon recovery systems and states "All the recovered groundwater and hydrocarbons are being sent to Amoco's wastewater treatment plant for pretreatment prior to discharge to the POTW."

48. Site Investigation and Remediation Report, Union Pacific Railroad Company - July 22, 1996.

"Project background representatives from Salt Lake, Union Pacific and Amoco discovered petroleum entering the storm sewer at Manhole No. 7 in early November 1995. On November 17, 1995, petroleum was pumped out of the manhole and the manhole was sealed with grout to prevent petroleum from entering the storm sewer. Amoco placed booms in the Oil Drain Canal and periodically monitored conditions in the canal to contain any further petroleum releases. The source of the petroleum was believed by the Health Department to be associated with past or current operations at the railroad yard or refinery."

[p.2] Describes separate incident on March 1, 1996. . . leak in Chevron's low sulfur diesel pipeline.

[p.5] "2.4 Diesel Tank Removal: The 500-gallon diesel underground storage tank located near the northeast corner of the Union Pacific One Spot Car Repair Shop was removed on April 25, 1996 by Professional Service Industries, Inc. (PSI). ERM observed the tank removal procedures and collected two samples of product floating on the ground water within the excavation during its removal (UP-UST-1 and UP-UST-2).

....

According to Larry Roth, Union Pacific General Car Foreman, the diesel tank was removed from service during the early 1980's. However, the tank was returned to service for a seven month period (May to November 1995) to fuel maintenance equipment. Invoices show that the 4,167 gallons of diesel were placed in the tank during this period."

Report details several other incidents.

49. Final Report Site Investigation, Chevron-Amoco Pipeline (Northwest Oil Drain) Site, Salt Lake City, Utah - November 1996.

[p.2] "In February 1996 an underground pipeline carrying light oil ruptured and the oil migrated underground into the Northwest Oil Drain (buried culvert). Approximately 14,000 to 15,480 gallons of oil were released by the ruptured pipeline (Weston 1996a). Oil was observed in the Northwest Oil Drain from the location where the drainage returns

to the surface (Outfall) to where the system discharges into the Great Salt Lake (TW Company 1996)." Also describes remedial efforts.

50. **Letter to H.P. Patterson, UPRR, from Raymond Farr, Amoco, January 22, 1997.**

More detailed discussion of oil in 900 North stormwater sewer system oil.

[p.5] "The system of recovery trenches addresses contamination that the investigation clearly revealed the primary source to be the leaking UPRR underground storage tank."

51. **Letter from TriTechnics Corp to H.P. Patterson, January 28, 1997.**

"In this data supplement, groundwater contour, benzene concentration, and refinery flow path maps used during our presentation of findings on December 3, 1996, are shown in Figures 1 through 4. " Also includes groundwater elevation data in figure 5 and gas chromatograms of LNAPL and free product from the UPRR underground tank excavation in figure 6.

52. **Letter to Mr. Steven Goodsell, UPRR from S.G. Horsfield, Amoco, March 19, 1997.**

"Our consultant's report showed hydrocarbons south of the sewer to be similar to the material in the UP underground storage tank. It appears releases from the UP underground storage tank entered the sewer system in the area between Manholes 7 1/2 and 8, where the sewer had no bottom. Hydrocarbons north of the sewer at the fenceline are not similar to the material in the underground storage tank.

....

The system along the storm sewer in UP's yard provides Union Pacific with both short and long-term benefits, but provides little benefit to Amoco since it addresses contamination from Union Pacific's underground storage tank."

53. **Email (?) to Rick L. Eades, Lanny A. Schmid, From Ken R. Welch - May 9, 1997.**

"At midnight on Sunday the 4th of May, manager Chemical Transportation Safety, Harry W. Rudebach was notified by the on-duty MTO at Salt Lake City, Utah regarding a diesel fuel leak from a tank car at UP 70163. I was advised that the car had been leaking for some time and they had attempted to notify me one week earlier, but had failed to make contact.

....

When I received notification, I immediately responded to the yard and found the tank car leaking and evidence of a major spill.

My investigation revealed the car had a bad order notice attached, dated 9:00 a.m., 4/13/97 from Mr. Rudy Sanchez of Amoco Oil indicating the car had a cracked bottom outlet valve and the tank was not secured to the underframe of the car. Visual inspection disclosed that the bottom outlet valve had been sheered off and one of the straps that tied the tank to the underframe was broken and had been secured in place with a bungee cord

to prevent a safety hazard. All the bolts that secure the tank onto the underframe had been sheered off and the tank was found with two holes in the bottom adjacent to the outlet valve, approximately the size of dimes.

Investigation is continuing to determine why Amoco loaded a car in bad order condition, and release it for transportation, and to determine when the tank actually began to leak."

54. **Letter to H. P. Patterson of Union Pacific from Raymond Farr, Amoco Remediation Services - October 27, 1997.**

"In summary, the product characterization data show that the product and subsurface between the UPRR yard is relatively fresh and matches the product samples collected from the city storm sewer. Product entering recovery system RS 203 at the Amoco Refinery is more biodegraded from longer residence time in the subsurface or greater travel time from the likely source of UPRR yard. Monitoring well samples from Amoco's fenceline show that fresh diesel has reached the front fenceline from the upgradient source in the UPRR yard and may be mixing with more degraded products between the fenceline and the recovery system. Based on known groundwater elevations and contours, it is likely that railroad diesel from the source of the UPRR yard is now moving on Amoco's refinery."

COPY

Amoco Says Sludge Not Serious

By Jim Woolf
Ft. Collins Environmental Writer
An Amoco Oil Co. study has found "no signs of serious environmental impact" associated with sludge buried in Salt Lake City's Rosewood Park, 1200 N. 1200 West.
However, a company official said the final verdict on whether the sludge is a major problem will have to await independent tests now being completed by the Federal Environmental Protection Agency.
John G. Huddle, process and planning coordinator for Amoco's Air and Water

Sludge Not Serious

ough there was considerable about the sludge in surrounding neighborhoods, state, county and officials did little about the problem about two years ago when the and potentially toxic substances dge. It was unclear, however, materials were in high enough tions to present a health ecause no one was sure of the he EPA ordered additional d required the city to build a round the site.
studies done by the county ous old canals in the area, ich were also used as dumps al by-products. Mr. Huddle didn't look at the canals in its study because his company dumped only into the sludge pit. "The canals are none of our doing," he said.
Amoco began extensive studies around the sludge pit slightly more than a year ago. The goal was to determine the extent of the problem and whether anyone else had dumped dangerous materials in with the sludge.
The EPA also initiated a study to both look at problems in the entire area and verify the Amoco findings. That study should be completed in about a month, said Mr. Huddle.
John Wardell, the EPA's regional "superfund" coordinator, refused to comment on the merits of Amoco's proposal, saying only that it is being reviewed.

KTVX, Channel 4
KSL-TV, Channel 5
KBYU, Channel 11

- Thursday
January 7
5:45 a.m.
- 2--Early Farm Watch
5:55 a.m.
 - 2--Today in the West
 - 5--Farm and Ranch
6 a.m.
 - 2--NewsWatch 2
 - 4--Crossfire
 - 5--Wake Up
 - 7--Humanities Through the Arts
6:30 a.m.
 - 2--Mary Tyler Moore
 - 4--Morning Stretch
 - 5--Morning with Charlie Kuralt and Dore Sawyer
 - 7--French
 - 20--Study in the Word
7 a.m.
 - 2--Today
 - 4--Good Morning America
 - 7--Sesame Street
 - 11--Weather
 - 20--The Great Search Continues
7:15 a.m.

Amoco Oil Claims Sludge Not Serious

its study because his company dumped only into the sludge pit. "The canals are none of our doing," he said.

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John Wardell, the EPA's regional "superfund" coordinator, refused to comment on the merits of Amoco's proposal, saying only that it is being reviewed.

Although there was considerable concern about the sludge in surrounding neighborhoods, state county and city officials did little about the problem until about two years ago when the EPA found potentially toxic substances in the sludge. It was unclear, however, if the materials were in high enough concentrations to present a health hazard. Because no one was sure of the danger, the EPA ordered additional studies and required the city to build a tall fence around the site.

Further studies done by the county found numerous old canals in the area, some of which were also used as dumps for industrial by-products. Mr. Huddle said Amoco didn't look at the canals in

the refinery of either digging up the material and trucking it away to a disposal site or attempting to "neutralize" it in the park.

Sludge, the material left over from the refining of petroleum, was dumped by Amoco in a large pit where the park is now located. The dumping occurred from the 1920s to 1957, when residents of rapidly encroaching neighborhoods complained about the practice. A dirt "cap" was placed on the sludge pit in 1960.

The deposit was forgotten until July of 1976 when a large tractor, grading soil for Rosewood Park, broke through the cap and began sinking into the sludge. Workmen at the time com-

- 20--No. 1 From Page B-1
- 20--Sora, Gray, MacRae
- 12:15
- 5--Up to the M
12:55 p.m.
- 2--Today in the West
1:30 p.m.
- 2--Emergency
- 4--General Hospital
- 5--The Guiding Light
- 11--Mister Rogers Neighborhood
1:30 p.m.
- 11--Polka Dot Dream
2 p.m.
- 2--Another World
- 4--The Edge of Night
- 5--Movie: "By Your Side"
Sneal
- 11--Cooking with Mrs. T
2:30 p.m.
- 20--Dick Van Dyke
3 p.m.
- 4--The Love Boat
- 11--The Victory
- 20--The Love Boat
3 p.m.

WEDNESDAY
OCTOBER 7, 1981

ADMINISTRATIVE
RECORD

040389

Rose Park sludge pit remains a naza

By Bob Bernick Jr.
Deseret News staff writer

A year after the Environmental Protection Agency told Salt Lake City officials an oil sludge pit next to Rose Park is toxic and people should be kept away, children are once again riding their bicycles in the goo, officials say.

A hole has been cut in a new fence surrounding the pit. "I'm surprised there aren't children here today," said David Nelson of the City-County Health Department, after touring the pit last week.

"I've seen kids in here this summer. They cut a hole in the fence to retrieve their soccer balls kicked over the fence," Nelson said. A soccer goal is just on the other side of the pit fence.

Also, signs warning of the pit's toxic nature and telling people to keep out have never been put on the fence, said council member Ronald J. Whitehead, who represents the area.

While the pit isn't secure as city officials promised, work is going forward on analyzing the sludge, the first step in a decision on how to clean it up.

Tests are being prepared by the EPA and AMOCO, the oil company that

Sludge pit emits strong acid fumes

bought the old Utah Oil Refinery, the firm that dumped the oil sludge, officials said.

EPA officials told the city children must be kept off the sludge, and Salt Lake Mayor Ted Wilson and Parks Director John Gust agreed. A new fence, with barbed wire on top, was built farther into the park, away from the pit, to keep people from the sludge bubbling up through part of the park. It is that new fence that has been cut open.

"I heard two kids were riding their bikes on the pit's dirt and slid in the sludge. Before they could get home and wash their bikes off, the sludge had eaten the paint off," Nelson said.

"But they charge a great deal of money. Even so, it would cost much more to ship it off to the nearest hazardous waste site in Denver," he said.

Whitehead said he wants a hill built over the pit in either alternative.

"A hill would block the homeowners' sight of the oil refinery (to the north) and could be a sleigh-riding hill in the winter," he said. Rose Park, being flat, has no place to sleigh ride, Whitehead said.

Nelson said AMOCO testing has been more scientific than EPA's. "They've drilled six permanent test wells. Next week, we should be taking water samples from the wells and have them analyzed.

Barber said EPA will run tests on the water, as will AMOCO. "And AMOCO will hire an independent laboratory to do a third test. If the results still can't be uniform, a sample will be given to the state," he said.

The sludge drainage ditches, used to carry sludge from old refineries to the sludge pond, over which numerous Rose Park houses were built will be handled in a separate matter, Nelson said.

"We're encouraged. The last vapor test we made of some of the ditches turned up negative. However, we still don't know what heavy metals are down there," he said.

The sludge pond issue was raised last year after the local administrator of the EPA wrote Wilson two letters requesting, almost demanding, the pit be fenced properly.

Through an administrative mix-up, Wilson didn't get the letters personally. When he found out about them, he ordered the fence to be put up and requested a meeting with EPA officials.

At that meeting Wilson was told the sludge isn't dangerous, as long as people are kept physically away from it. There was also talk of trying to get part of the federal environmental cleanup fund, \$1.6 billion, to pay the costs.

"We've taken administrative steps



COPY

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"I heard two kids were riding their bikes on the pit's dirt and slid in the sludge. Before they could get home and wash their bikes off, the sludge had eaten the paint off," Nelson said.

The sulfuric acid vapor that escapes from the sludge was obvious when a Deseret News reporter, photographer and officials toured the pit. "The acid will give me a headache if I were to stay here an hour," said Nelson.

The cost of cleaning up the pit, about five acres in size, will run into the millions of dollars, said Nelson. AMOCO has offered to help, feeling some responsibility, said Paul Barber, administrative assistant to Wilson.

"There is a Swedish company, Soli Recovery Inc., that has had great success with problems like this. They dig up the sludge, treat it with lime and what they call their secret ingredients, and then bury it at the original site" Nelson said.

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"We've taken administrative steps just recently to improve that chance," Nelson said. Still, someone or some government is going to be facing a multimillion-dollar bill before the pit is safe, he said.

It was relatively safe in the early 1950s when the city bought the pit site and surrounding land for a park. All was well until park officials decided to build some new tennis courts at the park's north end.

A bulldozer, trying to level off the court site, cut off a dirt cap on the pit. The bulldozer began to sink in the sludge, and was barely pulled out, city officials say. Ever since, when the hot weather comes, the sludge has been oozing to the surface and stinking.



Deseret News photo

Paul Barber, an aide to Mayor Ted Wilson, examines oil sludge next to Rose Park. Pit became a hazard when someone cut hole in a fence.

Figure 1. Study area.

Legend:

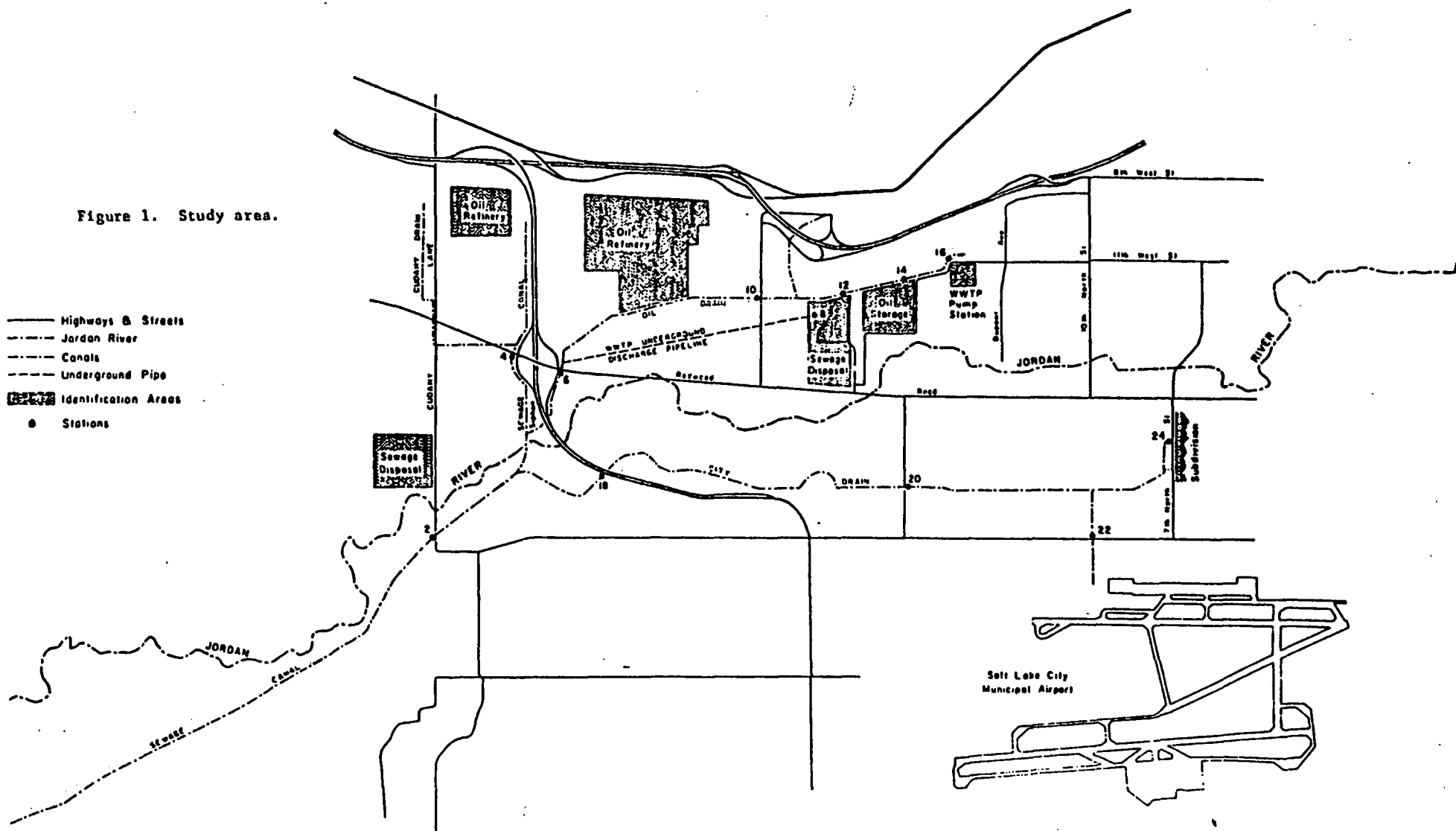
- Highways & Streets
- Jordan River
- Canals
- Underground Pipe
- Identification Areas
- Stations

Map Labels:

- Oil Refinery
- Sewage Disposal
- WWT Pump Station
- JORDAN RIVER
- CUDARY LANE
- CUDARY DRIVE
- JORDAN CANAL
- WWT UNDERGROUND DISCHARGE PIPELINE
- OIL DRAIN
- SEWAGE DRAIN
- CITY DRAIN
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Inset Map:

- Salt Lake City Municipal Airport



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(801) 468-2711

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SALT LAKE COUNTY
208 WATER QUALITY
PROJECT

ADMINISTRATIVE
RECORD

10000
Report

FRED C. HART ASSOCIATES, INC. • CONSULTANTS

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040409

SF FILE NUMBER

3.4

January 5, 1981

Mr. Keith Schwab
Deputy Project Officer
U.S. Environmental Protection Agency
1860 Lincoln Street
Denver, Colorado 80295

COPY

RE: TDD No. F8-8007-5A - Salt Lake and Davis County, Utah
Refinery Sludge - Preliminary Assessment

Dear Keith:

Preliminary search of file data at the E.P.A. Region VIII offices was completed with contacts with Bill Kennedy (NPDES Files), Dave Joseph (PSD Files), Paul Osborne (UIC Files), and Jon Minkoff (RCRA Files). A study plan was written concerning a trip to Salt Lake City to go through the files at the State offices and the City and County offices and to make an off-site reconnaissance study of the known refineries. The study plan was sent to the EPA project manager on December 5, 1980. Dale Parker of the Utah State Health Department was notified of the plans by telephone prior to our departure from Denver. He requested that we meet with Kent Gray on December 15, 1980 since he would be out of town for the rest of that week.

John Zimmerman and Ray Buyce conducted research relative to TDD #F8-8009-5a geohydrology of Northern Salt Lake and Southern Davis Counties, prior to the scheduled meeting with Kent Gray. A potential petroleum sludge recycler, Khos Semnani, was also contacted at the suggestion of Jon Minkoff, Region VIII EPA. He provided some background information for TDD #F8-8007-5a.

Kent Gray and Jim Salmon of the State Department of Health informed us that Utah had been given control of their own RCRA program the preceeding Friday afternoon (something that Dale Parker neglected to tell us when he was telephoned from Denver prior to our departure). Kent Gray said that because the State would be doing their own RCRA inspections of the refineries he objected strongly to our intention of contacting them to ask questions about their sludge disposal. He wasn't pleased with our plans to do off-site reconnaissance and wanted us to wait until the State and EPA could discuss the respective roles of RCRA inspections and FIT evaluations before we took any actions concerning the refinery sludges. They did offer to provide us with their file information. In the interest of maintaining good relations between EPA and the State of Utah, we agreed to limit our activities to a file search and not to contact refinery personnel. The entire Jordan Valley was in a fog bank during our visit so postponing the off-site reconnaissance wasn't much of a sacrifice.

Mr. Keith Schwab
January 5, 1981
Page 2

We did make an exception and looked at a site far from any refineries. Dave Nelson of City and County Health told us of a site he discovered north of the airport - a fenced area with a sign warning, "Caustics, Stay-Off American Oil Company", enclosing a very black tilled field with a disc-harrow in evidence. Because there was little chance of meeting any refinery people, John and I went to look at the site. We agree with Dave that it is apparently a site where the Amoco Refinery is landfarming refinery sludge. I reported the site to Jim Salmon by telephone after we returned to Denver. The site is at NE $\frac{1}{4}$, Section 8, T1N, R1W.

Progress to Date:

Volume of Refinery Sludge Estimated - Mr. Semnani estimated the waste production of the Phillips refinery at 3,000 lbs. per day of which 2,000 lbs. is only moderately hazardous and may be given exemption by EPA and 1,000 lbs. is truly hazardous. Phillips processes 24,000 barrels of crude per day (or 10,000,000 lbs.).

If a similar ratio of waste-generated to crude-processed holds for the other refineries it is possible to estimate the quantity of waste generated in the Valley.

If the refineries in the Valley process a total of 135,000 barrels of crude per day, then they produce 8.4 tons per day of solid waste presently designated as hazardous, of which 2.8 tons of highly hazardous material. In a year (365 days) the total solid waste produced would be at least 3,000 tons and the highly hazardous waste produced would be at least 1,000 tons. Production of petroleum coke from the sludge could reduce the amount of waste generated.

Projected values for the amount of sludge generated in the Jordan Valley since 1930 could run as high as 150,000 tons of solid waste including 50,000 tons of high hazard material.

A minimum figure of 60,000 tons might be derived from Phillips Petroleum's estimate of their total production of process waste from 1932 to 1978 (data from a house subcommittee questionnaire). Since Phillips presently processes about 18% of the crude oil refined in the Valley and they estimate their total waste generation at 10,300 tons, the total process waste from all refineries would be 57,200 tons.

The range of estimates of process waste (sludge) that has been generated, in the Jordan Valley since 1930, is from 60 to 150 thousand tons.

Present Location of Sludge - A copy of a questionnaire filled out by Phillips Petroleum Company for the U.S. House of Representative's Subcommittee on Hazardous Waste was obtained from the Utah State Division of Environmental Health. Phillips estimated their process wastes as of 1978 as being 10,300 tons (this may represent the period from 1932 - 1978). Five

Mr. Keith Schwab
January 5, 1981
Page 3

disposal sites were identified as having received the waste. Two of the sites are on refinery property, one at the Woods Cross Site and the other at NW¼, Section 22, T2N, R1W at their "lower 40" property. The other three sites are landfills in the valley. The volume estimates are as follows:

Woods Cross Refinery	100 tons	1932-1979
Lower 40	7,000 tons	1932-1979
BARD Landfill	3,000 tons	1948-1979
Salt Lake County Landfill	100 tons	1979
Salt Lake City Landfill	100 tons	1976-1979

Other refineries in the Valley may have been disposing of their wastes in a similar manner. We know that Amoco disposed of sludge in the Rose Park pit (their own land) from the 20's to 1957. Now, Amoco is apparently landfarming an undetermined amount of sludge at the NW¼, Section 8, T1N, R1W site described above. Chevron is landfarming sludge at SW¼, Section 11, T1N, R1W (even though they applied for a state permit to do so and were turned down). Probably other landfarming operations are in the planning stages or are in operation. The landfills have been closed to refinery sludge since January 1980 (according to Jim Salmon). Apparently the refineries are utilizing on-site storage capacity until an acceptable disposal method is found or they are using some creative methods of dealing with the estimated 3,000 tons of sludge generated in 1980.

Recommended Future Action:

The following actions are recommended to accomplish a preliminary assessment of the problems associated with disposal of refinery sludges in Northern Salt Lake County and Southern Davis County:

EPA Responsibilities:

- 1 Coordinate with the Utah State Health Department to establish to your mutual satisfaction the role of FIT and that of the State of Utah RCRA team.
- 2 Obtain the aerial photography for the rest of the area under consideration.
- 3 Make available to FIT Part A of the RCRA applications for the refineries.

FIT Responsibilities:

- 1 Extract the relevant data from the Part A RCRA applications.
- 2 Examine aerial photography of the Jordan Valley using characteristics of known landfarming operations to identify similar-looking areas for field-checking.

Mr. Keith Schwab
January 5, 1981
Page 4

- 3 Coordinate with the State of Utah as directed by EPA and contact the refineries concerning data which is missing, unclear, or contradicting.
- 4 Conduct off-site reconnaissance of refineries and suspect areas identified from aerial photography in Northern Salt Lake County and Southern Davis County.
- 5 Complete IPARS.

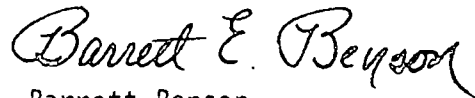
I hope this progress report is satisfactory. If you have any questions, please contact Ray Buyce for clarification. Please be aware that the actions listed as EPA responsibilities will need to be completed prior to January 9, 1981 or an extension of the completion date for the TDD will most likely be necessary.

Sincerely,

FRED C. HART ASSOCIATES, INC.



Raymond Buyce
FCH Project Manager



Barrett Benson
FIT Leader

cc: Larry Wapinsky, EPA Project Manager

RB/eml

1766

Resident of Rose Park Sector Urge Investigation of 'Obnoxious Odor'

S.L. TRV - 10-22-65

A dozen Rose Park residents Thursday met with Salt Lake City officials to investigate the cause of an odor which is making life miserable for the northwest area residents.

The group, some 20 in all, gathered just north of the city limits at the juncture of the Jordan River and the city's sewer canal leading from the new treatment plant.

Mrs. Ione Tippetts, 1151 Sterling Dr., and Mrs. Florence Bittner, 885 N. 13th West, were spokesmen for the citizen group.

Residents Sickened

Mrs. Tippetts said that when atmospheric conditions are right, the smell of accumulated sewage and petroleum wastes spreads over Rose Park and sickens many residents.

One elderly man suffers coughing fits from the fumes and his family feels this aggravates his heart condition, said Mr. Tippetts.

The offending area is located in Davis County.

Salt Lake City Water Commissioner Conrad B. Harrison and Wilbur C. Parkinson, chief sanitarian for the City Health Department, represented the city.

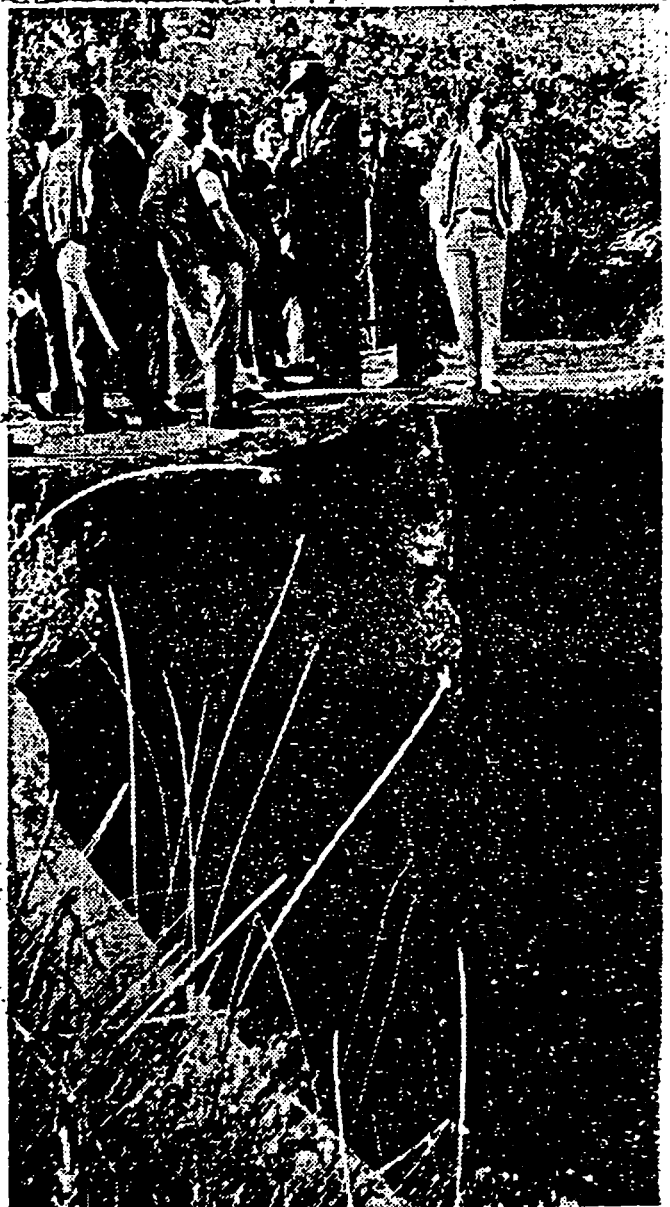
No Jurisdiction

They said the city technically has no jurisdiction over the area, but admitted Salt Lake City could be partially responsible for some of the substances dumped into the waters.

Commissioner Harrison said he has invited oil refinery officials to meet with the City Commission Tuesday to discuss the problem.

Commissioner Harrison said completion of Salt Lake City's new sewage plant had abated much pollution, but other sources still contributed heavily.

Among possible sources of contamination mentioned were raw sewage from Davis County and petroleum wastes from nearby refineries.



A group of Rose Park citizens and city officials view area where Jordan River, sewage canal meet causing offensive odor.

1966

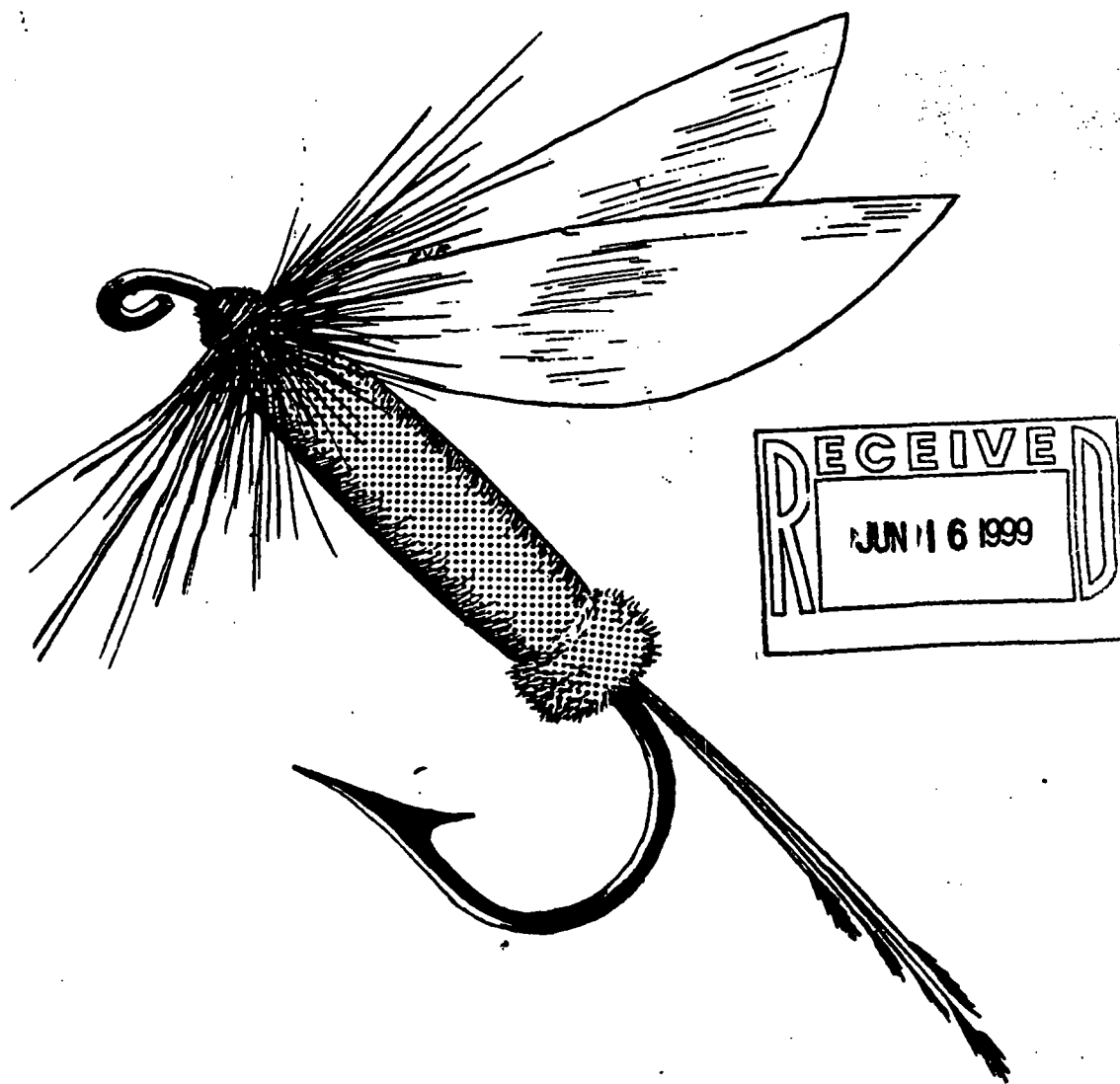
NWOD

Doc # 21 - Amco - 104(e) response

1958

GENERAL SURVEY OF WATER POLLUTION IN UTAH

DEPARTMENTAL INFORMATION BULLETIN 61-9



UTAH STATE DEPARTMENT OF FISH & GAME

Harold S. Crane, Director

TITLE OF JOB

General Survey of Water Pollution in Utah.

OBJECTIVE

To locate and determine the extent and nature of water pollution existing in ~~Utah~~ from June 1, to October 1, 1958.

PROCEDURE

The State was divided into the following major water drainages:

- I Colorado and San Juan Rivers
- II Green River with White River, Duchesne River and Price River as major tributaries
- III Bear River with Malad, Logan and Little Bear River as major tributaries
- IV Weber River with Ogden River as major tributary
- V ~~Utah Lake, Great Salt Lake and Jordan River~~ with Provo River and Spanish Fork River as major tributaries
- VI Sevier River
- VII Virgin River

Each major drainage was investigated thoroughly to determine the source, nature and extent of pollution existing.

Chemical analyses of water samples were made to determine exact nature of pollutant being liberated.

Tests were made to determine tolerance of fish to the known and unknown pollutants.

Photographs in color and black and white were made of areas where pollution was most serious.

FINDINGS

Virtually all the waters of Utah were found to contain either industrial or domestic pollution or both in varying degrees of intensity.

This report will discuss each drainage system, as above outlined, on the basis of (A) domestic pollution and (B) industrial pollution. Pollution will be regarded as the addition or introduction of any substance to the water that may render such water less desirable or unsuited for aquatic life.

I COLORADO AND SAN JUAN RIVERS

DOMESTIC POLLUTION

The Colorado River has its source in neighboring states and only relatively

60° F it became soft and very sticky clinging to the mud and vegetation. During most of the daylight hours the pitch was in this soft state and when birds, large or small, came in contact with it they were immediately trapped to remain there and die of starvation and exhaustion (See Photographs 41, 44, and 45).

When the seriousness of the situation was observed by the Utah Power and Light Company they immediately ordered men and equipment to the disaster area and proceeded to remove the pitch to a safe burning and burial area. Due to the nature of the pitch and the fact that it had separated into small pieces and had spread over a large area, the clean up job became very costly and time consuming. Large quantities of pitch were removed by draglines, however, much of it had to be picked up and carried away by hand. Company officials estimate the cost of the accident at some \$90,000.00.

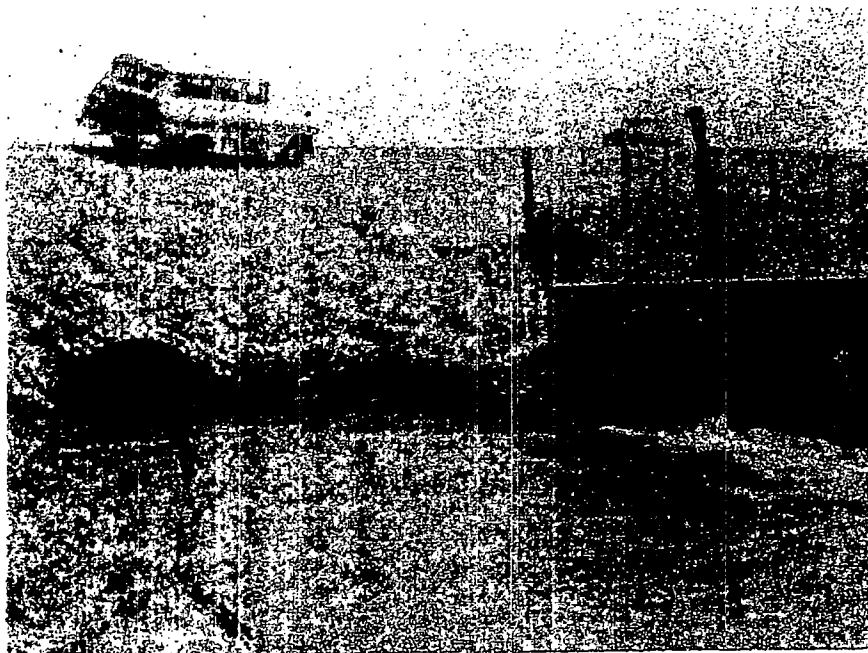
While considerable numbers of birds were lost and much disturbance on the nesting areas created by the clean-up activities, much more damage could have resulted had the company refused to assume their responsibility and withheld their excellent cooperation in the clean-up job. Further details of the accident are in other reports on file in the Utah Fish and Game Office in Salt Lake City.

Sugar factories, smelters, food processing plants, and other milling operations located along the course of the Jordan all contribute waste materials to the river. The sugar factory at West Jordan is a major source of organic waste materials entering the stream. Factory wash water and pulp waters are drained directly into the Jordan, as are the wastes from the large smelting and milling plants located at Midvale and Murray.

Disregard for the proper disposal of industrial waste has reduced the Jordan River to a foul, unpleasant stream throughout its entire length.

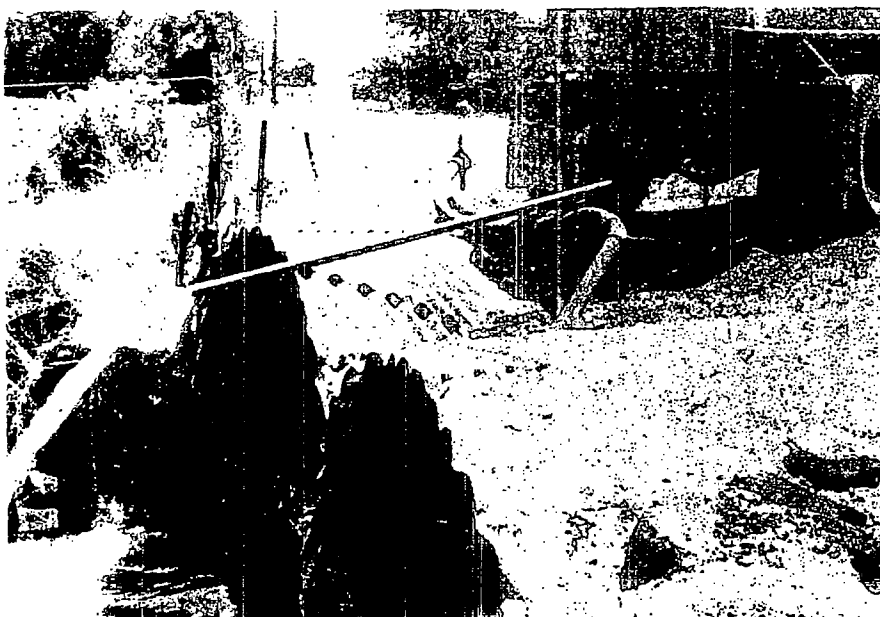
The Utah State Department of Health, the University of Utah, and the Utah Water Pollution Control Board have all made investigations on the pollution of the Jordan River and have all concluded that the stream is highly charged with pollutants of numerous types. From a recreational point of view it is very disheartening and disturbing to think of a river, flowing through a heavily populated area, that could be used for boating, swimming, and angling rendered useless by uncontrolled domestic and industrial pollution.

Great Salt Lake is the recipient of all residual waste from Utah Valley and Salt Lake Valley via the Jordan River. In addition to the Jordan wastes, Great Salt Lake receives considerable industrial wastes through the Salt Lake City sewer canal. The Utah Oil company, Union Pacific Railroad Company, Cudahy Packing Company, Standard Oil Company, and Western Oil Refining all discharge wastes into the Salt Lake City sewer canal which flows direct to Great Salt Lake (See Photographs 21, 26A, 31, 32, 39 and 40). It is obvious that a canal flowing some 30,000,000 gallons of raw sewage plus large quantities of industrial oil wastes into a lake every day, can



Photograph 26.

Outlets of Salt Lake City sewer line (right) and industrial sewer line (left) at 17th West and 25th North. Salt Lake City releases 30,000,000 gallons of raw sewage per day while the industrial sewer releases less but more potent wastes into this sewer canal to be run off into the duck marshes on the shores of Great Salt Lake (see photographs 21 and 26A.)



Photograph 26A.

Truck leased by Utah Oil Company dumping waste sulphuric acid and caustic soda into sewer canal at 35th North. This company disposes of some fifteen, twenty-three gallon loads of these materials each week to flow into Great Salt Lake and adjacent marshes.



Photograph 31.

General view of industrial sewage canal coming from Utah Oil Refinery Company and the Union Pacific Railroad yards in North Salt Lake. Houses in the background are a portion of Rose Park residential area. The area is unsightly and a hazard to the children of the neighborhood. This contamination flows some two miles before it enters Salt Lake City's open sewer to Great Salt Lake.



Photograph 32. Waste ditch from Cudahy Packing Plant in North Salt Lake.

This ditch carries large quantities of blood, paunch washings and scraps from cookers and escaped animal fats. The materials enter the ditch and because of shortage of water remain there to rot. This condition is unsightly and is causing very bad odors to develop. The stream parallels Cudahy lane, a main highway of the district, and flows very slowly to Salt Lake City sewer canal where it is there carried to the duck marshes and Great Salt Lake. Aside from being a very obnoxious situation it is a definite health hazard.



Photograph 39. Waste ditch from Union Pacific Railroad repair shop.

This stream originates at Wasatch Spring bath resort and flows to the Salt Lake City sewer canal. As the stream passes the Union Pacific Railroad yards many gallons of oil and washing compound from the railroad shops are released directly into it. Oil skimmers are placed along its course but are ineffective. Note oil marks along banks. Burning cannot be done safely because of the proximity of power lines and railroad tracks. Oils from this source flow on to duck marshes along the shores of Great Salt Lake.



Photograph 40.

Photograph shows condition of waste ditch leading from Union Pacific Railroad yards. The plank in foreground is intended to skim oil from water to be burned; however, because of proximity of tracks and utility poles this is not possible. Oils should be removed from shop wastes within the shop and never be permitted to reach any stream. Present waste water and oil flow through sewer ditch to marshes in Great Salt Lake.



Photograph 41.

Adult male pheasant trapped in waste tar near Gibbons and Reed mix plant at 9th North and 8th West. Traps like this cause the death of many small animals as well as birds. Wastes of this nature should be buried.



Photograph 42. Columbia Steel Company silt trap.

Immediately below the Columbia Steel Company plant the waste waters from the plant enter a series of silt traps. Some of the plant wastes are removed here, however, none of the toxic chemicals are affected. A new series of settling ponds have been constructed to the right of this area to remove more of the solids from the waste stream. Because of the dissolved chemicals that cannot be settled out the stream still constitutes a very serious pollution source for Utah Lake.

7-20-52
F

A G R E E M E N T

THIS AGREEMENT, made and entered into this ____ day of August, 1952, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of the State of Utah, party of the second part, WITNESSETH:

WHEREAS, on the 12th day of September, 1922, the parties hereto entered into an agreement whereby the Oil Company was granted permission to discharge up to six second feet of waste water, sewage plant refuse, and etc. into the City's drain canal and be carried to Great Salt Lake perpetually unless either of the parties were prevented by legal proceedings from carrying said waste materials in an open drain or discharging the same in the Great Salt Lake; and

WHEREAS, it now appears that numerous and diverse residents living west of the Oil Company's property and nearby the aforementioned drain are complaining that fumes and disturbing odors are carried into their homes to the annoyance and discomfort of all concerned, and said residents are threatening to sue to have the Oil Company enjoined from continuing to transport the waste materials from its refinery through an open channel; and

WHEREAS, the City Engineer of Salt Lake has prepared plans and specifications for the laying of a ^{concrete, cast-in-place} ~~stagnant~~ water-tight pipe to carry the waste materials from the Oil Company's property and others and convey it to a point northwesterly ^{approximately 4,000 ft.} from the present residents living in that vicinity; and

WHEREAS, the Oil Company is desirous of having the right to have its waste materials carried in a closed pipe as specified by the Engineer, and is desirous of having the right to have up to six second feet of water and waste materials carried through said pipe.

NOW, THEREFORE, in consideration of the premises the parties hereto have agreed as follows:

That the City will construct an underground pipeline as above mentioned and in accordance with the plans and specifications which have been prepared by the City Engineer, and which plans and specifications are hereby adopted and made a part of this agreement. The party of the second part hereby agrees to pay to the party of the first part \$35,000 toward the cost of constructing said pipe or sewer line aforementioned.

It is further understood and agreed that the second party shall have the right to have carried refuse and waste materials from its Oil Plant through the sewer line in any amount not exceeding six second feet ^{without being forced under normal conditions} and carried from the terminus of the closed line in an open canal to Great Salt Lake perpetually unless said parties or either of them are restrained or otherwise prevented ^{by legal proceedings} from carrying said waters through the open ditch or discharging same into Great Salt Lake. _____

It is further understood and agreed that if the City is ever compelled to abandon or change or extend the proposed conduit or sewer by legal proceedings or otherwise ^{which by legal proceedings or otherwise} then the party of the ^{City of Salt Lake} first part shall be relieved from all obligations in law or equity from the obligations assumed under this contract.

It is further understood and agreed that the party of the second part shall hold party of the first part harmless for and on account of any damages which may be assessed against it in any court proceedings ~~or otherwise~~ ^{on account of} on account of the discharge from the underground channel into the open canal or drain, or discharging the same into Great Salt Lake.

It is further understood and agreed that the City will assume the responsibility for ordinary ^{repairs} repairs and for operating the sewer line.

IN WITNESS WHEREOF, the parties hereto have caused these
presents to be executed the day and year first above written.

SALT LAKE CITY,

Attest _____
City Recorder

By _____
Mayor

UTAH OIL REFINING COMPANY,

Secretary

By _____
President

*

August 8, 1952

Hon. Joe L. Christensen
Commissioner of Streets
and Public Improvements
City

Dear Sir:

Pct. #870

With reference to proposition of eliminating the nuisance of open oil drainage ditch located just North of Ninth North Street, West of Seventh West Street, by placing pipe line to carry this waste and which project cost is to be participated in by the Utah Oil Refining Company, Union Pacific Railroad Company and the City of Salt Lake.

The Utah Oil Refining Company have submitted a proposal to the City in their letter to me dated February 18, 1952, copy of which is attached hereto, in which they agree to contribute an amount of \$35,000.00 as their share of this project, subject to the terms explained in their above letter.

In view of the urgency and necessity of abating this nuisance it is my recommendation that the offer made by the said Utah Oil Refining Company be accepted, that the City Attorney be authorized to draft an agreement between the City and the said Utah Oil Refining Company, under the terms as set forth in their letter, and that the City Engineer be authorized to proceed with this project, which should be accomplished soon.

We met recently with the Union Pacific Railroad Company management and they tentatively agreed to participate in this undertaking. Money has been appropriated for the City's portion of this project.

Respectfully yours,

LW:fc
encl.

cc: E. Ray Christensen

Roy W. McLeese
City Engineer

March 11, 1952.

Mr. A. B. Hansen, District Manager
Union Pacific Railroad Company
U. P. Building, No. 10 South Main Street
City

Dear Sir:

With reference to a letter of January 2nd, 1952 and our subsequent meeting held in the office of Ernest Christensen for 12 months, relative to the proposition of paying the waste water drainage now flowing in open ditches in vicinity of Wash. to Eleventh North Street, east of Seventh West Street in Salt Lake City. Case File 443-5-1.

Mr. Sid Sundridge from your office, together with Mr. Corry of your legal staff, representatives of the Utah Oil Refining Company and the City, were in attendance at the above meeting to discuss this serious problem confronting Salt Lake City in the matter of eliminating an existing nuisance created by the type of waste now flowing in this open ditch and which waste originates from the Oil Refinery and the U.P.R. Co. shops area. This created nuisance and accompanying odors are the source of many complaints from property owners in the area and we feel that something must be done soon.

A tentative plan was developed at the above meeting and we were to receive information from the Union Pacific Railroad Company and others concerned as to their agreement and willingness to cooperate, but to date we have received no information from your Company as to what they will do regarding this matter, and in view of the fact that some decision must soon be made will you please advise us to our willingness to do our part in eliminating these troubles. Thanking you, I am

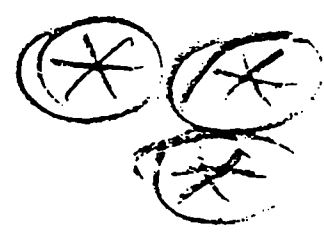
LM/ld

Very truly yours

Copy to Com. Joe L. Christensen

Roy E. McHase
City Engineer.

1 of 2



file

August 14, 1951

Mr. F. C. Paulson, District Manager
Union Pacific Railroad Company
Union Pacific Bldg. (No. 10 So. Main St.)
City

Utah Oil Refining Company
Utah Oil Building
City

Attention: Mr. F. A. Clark, Vice President

Gentlemen:

Further in connection with our recent meetings in the office of Commissioner Joe L. Christensen, Commissioner of Streets and Public Improvements, Salt Lake City, Utah, at which meetings your representatives have been present to discuss the proposition of piping the waste water drainage now flowing in open ditches in vicinity of 9th to 13th North Streets, West of 7th West Street in Salt Lake City.

As agreed at our last meeting held August 2nd, the City Engineer has prepared an estimate of the costs of the proposed drain line, together with a map showing generally the new location, and copies of same are attached for your information.

In line with attached estimate we submit the following figures as a fair suggested and proposed distribution of costs for doing the above work, to alleviate a very obnoxious and bad drainage condition now in existence. ~~The drainage ditch carries water from the Utah Oil Refining Company, the Union Pacific North Yard area and other drainage from the City.~~

Because of the obnoxious odors, the fine spray of oil on adjacent houses on 9th North Street in the vicinity of this ditch numerous complaints are received by the City, and something must be done to correct this condition. We have discussed this matter and feel that those causing the nuisance should pay proportional costs and further that the work shall be done as soon as possible.

Union Pacific Railroad Company

Utah Oil Refining Company

August 14, 1941

~~The nature of the waste drainage from the Utah Oil Refining Company will necessitate the painting of the pipe to limit the attack on the concrete pipe, which is much cheaper to install. This cost shall be charged to the Utah Oil Refining Company. The City will assume the responsibility of securing needed rights of way for the pipe line in addition to their proportion of costs. The proportional costs arrived at in line with attached estimate are as follows:~~

Estimated cost of project	\$59,727.50
Less Cost of painting interior of pipe	4,062.00
	\$55,727.50

Divided as follows:

Utah Oil Refining Co. 1/2 + cost of painting	\$26,925.75
Union Pacific Railroad Co. 1/4	21,431.67
Salt Lake City Corporation 1/4	21,431.68
	\$55,727.50

It is hereby understood that this cost involves the work of constructing said pipe line to 15th North only and that the City will assume ordinary maintenance of said pipe drain line; but in the future if any major repairs or improvements are required to further handle this water it shall be the responsibility of the owner, their heirs or assigns to stand their proportional costs for doing the work, which will be incorporated in the agreement to be executed by all concerned. The amount of money above outlined shall be deposited with the Salt Lake City Treasurer and will be held in trust for the completion of this project only, and the City Engineer will arrange for the securing of materials and constructing said drain pipe line in accordance with City specifications and under his supervision.

Your prompt response in this matter will be greatly appreciated, and again thanking you for your cooperation in this important matter, I am,

Very truly yours,

LM:fc

cc: Comm. Joe L. Christensen
Mr. E.H. Christensen

Ray E. McLesse
City Engineer

July 31, 1951

Mr. Edward J. Holmes
893 Poinsetta Drive
C i t y

Dear Sir:

Further regarding the drainage problem confronting the City in connection with the plans for piping the waste water drainage from Utah Oil Refining, Union Pacific Railroad and others, in vicinity of Ninth North North Street, west of Seventh West Street and northerly.

A meeting has been called for Thursday, August 2nd, 1951 at 2:30 o'clock pm. in my office to again review this situation which we feel is in need of immediate attention.

Kindly arrange to be present yourself, with such others who may be vitally interested, so that this matter may now be discussed fully in line with latest developments.

Very truly yours,

LHW:fc

Commissioner of Streets
and Public Improvements

UNION PACIFIC RAILROAD COMPANY

DEPARTMENT OF OPERATION
SOUTH-CENTRAL DISTRICT

F. C. PAULSEN,
GENERAL MANAGER

M. C. WILLIAMS,
ASSISTANT TO GENERAL MANAGER

10 SOUTH MAIN STREET
SALT LAKE CITY 1, UTAH

June 26, 1951

9193-3-G

Board of Commissioners
City and County Building
Salt Lake City 1, Utah

(Attention Mr. Joe L. Christensen,
Commissioner of Streets and Public
Improvements)

Gentlemen:

Referring to City Recorder Bitner's letter of June 7th, attaching copy of communication presented by Mr. Roy W. McLeese, City Engineer, dated May 25th, addressed to the Hon. Joe L. Christensen, Commissioner of Streets and Public Improvements, regarding the proposition of changing location of and piping for the waste water drainage now flowing in open ditch in the vicinity of Ninth North, west of Seventh West Street, which ditch carries water discharged from the Utah Oil Refining Company, Union Pacific Railroad Company, and City storm sewer, as well as the City's Hot Springs:

The City Engineer's communication is at great variance with report submitted by Mr. Christensen under date of October 2, 1950, apparently for the purpose of shuffling the expense to be assumed by the various parties involved, and certainly is a radical departure from the proposal in which the Union Pacific Railroad Company had indicated a willingness to participate. If there is any intention to progress this matter in the near future, I think it would be advisable for all concerned to know just what is contemplated before definite action is taken.

Yours very truly,



May 25, 1951

Hon. Joe L. Christensen
Commissioner of Streets
& Public Improvements
C i t y

Dear Sir:

Regarding the proposition of changing location of and piping for the waste water drainage now flowing in open ditch in the vicinity of Ninth North, west of Seventh West Street, and which ditch carries waste water discharged by the Utah Oil Refining Co., the Union Pacific Railroad Co., City storm sewer and other various drainage.

Because of the urgency of doing something to alleviate this nuisance, and as agreed at our last meeting in your office, where representatives of the above organization were present, that consideration would be given to piping this waste water, when the Engineering Department completed a further study and made an estimate of costs for the needed work, said costs to be divided between various users of the drain ditch and submitted to them for final action. This has now been accomplished.

It is suggested that this waste water be piped in a 42 inch diameter reinforced concrete culvert pipe, standard strength, except at crossing of proposed Speedway, where double strength pipe will be required. The location of proposed pipe line, in order to secure rights of way more readily, will be upon land to be acquired by the State for the new Speedway. The State have tentatively agreed to this proposal providing we locate the pipe line within their proposed right of way, giving proper description and submitting to them for final approval.

The total length of 42 inch diameter pipe required is approximately 3600 lineal feet, of which 250 lineal feet shall be extra strength. There will be also an approximate length of 520 lineal feet of 24 inch diameter concrete culvert pipe to be laid to take care of drain water at Eleventh ~~West~~ ^{North} Street. A total of

Hon. Joe L. Christensen

May 25, 1951

Twelve standard concrete cleanout lines and one special concrete inlet box will be required; the 12 inch water line along North 3th West Street will have to be lowered and arrangements for pumping the waste water during construction of special inlet box must be made.

The total estimated cost to complete this entire project is \$89,747.50, including everything but the costs for rights of way. It was my understanding that the Utah Oil Refining Company and the Union Pacific Railroad Company would divide the cost of pipe, boxes, materials, etc. and the City would do all excavation and work of laying pipe, pipe bedding gravel, constructing boxes, etc.

The distribution of the costs, based upon the above total estimate, would be as follows: Utah Oil Refining Co. \$43,711.77; Union Pacific Railroad Co. \$21,855.88; Salt Lake City \$24,219.85. It was also agreed that any costs involved for rights of way would be paid by said Utah Oil Refining Co. and U.P.R.R. Co.; however, the present outlook would appear that if proper arrangements can be made no costs will be involved for this purpose. No money was set up in above estimate.

I presume you may want to discuss this matter with the Legal Department before official notification is sent to parties involved, and any further information from this Department will be gladly given. I would further suggest that this matter be given prompt attention, so if agreed upon work can get under way.

Respectfully yours,

Roy W. McLeese
City Engineer

LWM:bw

SALT LAKE CITY CORPORATION

ROY W. MCLEESE
CITY ENGINEER

ENGINEERING DEPARTMENT

SALT LAKE CITY 1, UTAH

May 23, 1951

MEMO.

Mr. Roy W. McLeese
City Engineer
City

Dear Roy:

Regarding changing of and piping waste water ditch in vicinity of Ninth North and West of Seventh West, which has been causing so much trouble with oil and fumes from discharge waste, particularly from the Utah Oil Refining Company and the Union Pacific Railroad Company.

In making a study of this situation it is now suggested that the ditch be enclosed in a 42" diameter reinforced culvert pipe, standard strength, except at the proposed speedway crossing, where extra strength pipe shall be laid. All pipe to be coated with an approved acid resistant coating inside and outside. Pipe to be made using type II cement. Also an inlet ditch will have to be enclosed with 24" diameter pipe of the same as above described.

The location proposed, in order to secure the right of way more readily, will be generally along right of way proposed for new speedway; the State Highway Department have agreed to the proposal, I understand. Tentative location is shown on attached map.

The building of this line entails a great deal of expense and as tentatively agreed in past meetings the costs shall be borne by the organizations causing the nuisance. A tentative estimate has been prepared and is attached hereto.

Yours very truly,

LWM;fc

L. W. Myers
Asst. City Engineer

!

Drainage North of 9th North Street

At the meeting held October 10, 1950, it was agreed that a new proposal would be prepared based on eliminating the Utah Ice and Storage Company water, and charging the cost of filling the present drain to Real Estate Promoters. Reference is made to Proposal of September 1950.

Revised capacities provided will be:

		6 cfs	13.95	11.54
Utah Oil Refining Co.		3 "	6.98	5.77
Union Pacific Railroad		34 and 43 "	79.07	62.69
City				

Costs to be apportioned on the above percentages will be \$56,375 for 48-inch pipe and \$212,190 for 54-inch pipe.

Costs for capacities provided:

40-inch pipe

Utah Oil	13.95%	47,864.31
Union Pacific	6.98	3,934.98
City	75.07	44,575.71
Total	100.00	55,375.00

5 1/2-inch pipe

Utah Oil	11.54	\$24,486.73
Union Pacific	5.77	12,243.36
City	82.69	175,459.91
Total	<u>100.00</u>	<u>\$212,190.00</u>

Summary of Costs.

	Pipe Lining	48" Pipe	54" Pipe	Backfill	Totals
Utah Oil	\$9,328.00	\$7,854.31	\$24,486.73		\$41,679.04
Union Pacific		3,934.98	12,243.36		16,178.34
City		44,575.71	175,459.91		220,035.62
Promoters				\$25,300.	25,300.00
			Total Cost		\$303,193.00

STREETS and PUBLIC IMPROVEMENTS

NORTHWEST DRAINAGE AND WASTE WATER PROBLEMS

Meeting: October 10th, 1950; 2:30 P.M.

Office: Commissioner Christensen

The following were invited to attend:

Mr. F. C. Paulsen, District Mgr.	Union Pacific Railroad
Mr. F. R. Clark, Vice President	Utah Oil Refining Co.
Mr. M. N. McKenrick, Sewer Engr.	C i t y
Mr. E. R. Christensen, Attorney	C i t y
Mr. R. W. McDeese, City Engineer	C i t y
Mr. J. B. Davis, Chief Engineer	Utah Ice & Storage
Mr. Alan E. Brockbank	428 East End South
Mr. Edward J. Holmes	898 Poinsetta Drive

~~X~~ invitations given ~~X~~ status.

October 2, 1950

Utah Oil Refining Company
Utah Oil Building
City

Attention: Mr. Frank R. Clark, Vice President

Gentlemen:

You are hereby notified of a meeting to be held in my Office Tuesday afternoon, October 10th, at 2:30 o'clock to further discuss our Northwest Drainage and waste water problems, in which you are vitaly concerned. And representatives you desire to bring will be cordially welcomed.

As decided at our last meeting, the City Engineering Department have prepared a tentative outline as to location requirements and costs involved to take care of this situation to a point approximately Seventeenth North Street and while this outline is not conclusive it gives us something tangible to work with. Copy of this report is attached for your study and comment at the above meeting.

Kindly advise if you will be represented.

Very truly yours,

LWM:fc:rr
Encl.

Commissioner of Streets
and Public Improvements

Handwritten notes:
Notice of meeting
to be held in
my office
on Tuesday
October 10th
at 2:30 PM
to discuss
Northwest
Drainage
and waste
water
problems
in which
you are
vitaly
concerned
Representatives
you desire
to bring
will be
cordially
welcomed

file
August 24, 1950

Utah Oil Refining Company
Utah Oil Building
City

Attention: Mr. Frank R. Clark

Gentlemen:

This is to notify you of a meeting to be held in the Office of Salt Lake City Commissioner Joe L. Christensen, Thursday, August 31st, 1950 at 2:30 o'clock P. M., for the purpose of further discussing the drainage ditch problem confronting the City Commission in the northwest area of the City and in which your Company is vitally concerned.

I believe your organization was represented in this matter previously by Mr. Frank R. Clark and Mr. R. G. Clark, whom we cordially invite to be present, together with other representation you desire.

Very truly yours,

LSM:fc

City Engineer

1770C

4-5705

July 1950

PRELIMINARY REPORT

Pipe Line for Storm Water and Industrial Waste Water North of 9th North Street.

The proposed pipe line would carry storm and waste water from the existing open drain at 7th West and 9th North, west along 9th North in a 48 inch pipe to Marion Street where an existing storm sewer laid in American Beauty Drive discharges into the open drain, thence in a 54 inch pipe northerly along Marion Street, on the westerly side of the open drain, to 15th North, thence northwesterly to the vicinity of 17th North and connects with the existing open drain.

The preliminary estimate of cost is as follows:

48 inch pipe - 2050'	@	\$30.00	- - - - -	\$61,500.00
54 inch pipe - 6000'	@	\$35.00	- - - - -	210,000.00
Engineering and contingencies @ 20%			- - -	<u>54,300.00</u>
				Total \$325,800.00

Based on information available in this office, the 48 inch pipe will carry 32 cubic feet per second, and the 54 inch pipe, 44 cubic feet per second.

The capacities provided are as follows:

Utah Oil Refinery	6 c f s	
Union Pacific Railroad	3 c f s	
Utah Ice & Storage	1 c f s	
Warm Springs (Sulphur water)	3 c f s	Estimated
5th North storm sewer	5 c f s	do.
American Beauty storm sewer	18 c f s	
		<hr/>
		36 c f s

Estimated costs for capacities provided are as follows:

	48" - Cost	\$73,800.00	54" - Cost	\$252,000.00	
	%	Amount	%	Amount	Totals
Utah Oil	16.75	\$13,837.50	13.6	\$34,272.00	\$48,109.50
Union Pacific	9.4	6,937.20	6.8	17,136.00	24,073.20
Utah Ice	3.1	2,287.80	2.3	5,796.00	8,083.80
City	68.75	50,737.50	77.3	194,796.00	245,533.50
	100.0	73,800.00	100.0	252,000.00	325,800.00

It is believed that the pipe sizes of 48 inch and 54 inch will not be materially changed when accurate measurements of storm water flow have been determined. High water marks in existing 48 inch culverts

Page 2---

show that the proposed 48 inch section of the pipe line will be required to carry storm water and waste water which can be anticipated in the future.

Respectfully submitted

MNM/rh

M.M. McKendrick, Asst. Eng. - Sewers

February 8, 1950

Mr. C. E. Finney, Jr., President
Salt Lake Refining Company
North Salt Lake

Dear Sir:

It has been called to my attention that your company submitted a request for permission to discharge separator effluent, surface water, runoff and sanitary effluent into the Salt Lake City drain canal, September 13, 1948.

I find there has been no action taken on this matter by the Salt Lake City Commission, however, I am informed that you have availed yourself of this drainage canal.

I feel that it would be of mutual benefit to your company and Salt Lake City if a meeting with representatives of your department can be arranged to discuss this matter and have a formal agreement drawn up concerning this matter. Therefore, would you advise of a convenient date that representatives of your company could meet in my office, 401 Salt Lake City & County Building, so that we may arrive at a common understanding so that this matter may be closed.

Yours truly,

City Engineer

RWM:bw

SALT LAKE CITY CORPORATION

ROY W. MCLEESE
CITY ENGINEER

ENGINEERING DEPARTMENT

SALT LAKE CITY 1, UTAH

January 19, 1950.

Mr. Roy W. Mcleese
City Engineer
C i t y

Dear Sir:

Attached is a letter and prints from the Salt Lake Refining Co. addressed to Commissioner John B. Matheson under date of Sept. 13th, 1948, in which the Company requested permission to discharge separator effluent, surface water runoff and sanitary effluent into the Salt Lake City drain canal.

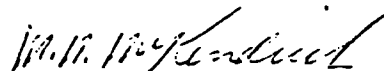
No meeting has been held with Refinery representatives since the letter was received from them, but waste water is now being discharged from the refinery into the City drain canal.

An agreement was executed by the City with the Utah Oil Refinery Co. in 1922 for the City to receive refinery waste waters in the same canal into which the Salt Lake Refining Co. is discharging their waste waters.

Since there is no apparent reason for the City to deny the Refinery request, it would seem desirable to have a meeting with Salt Lake Refinery Co. representatives, together with the City Streets Commissioner, City Attorney and yourself to formulate an agreement which can be prepared by the City Attorney for the City to receive discharge water for the Salt Lake Refining Co. into the City drain canal adjacent to the refinery.

A copy of the agreement with the Utah Oil Refining Co. is attached for your information.

Respectfully yours,



M.H. McHendrick
Assistant Engineer of Sewers

MMW/ld

*

November 28, 1949

Hon. John B. Matheson
Commissioner of Streets
& Public Improvements
C i t y

Dear Sir:

In connection with our "Preliminary Report On Drainage Pipe Lines For Northwest Part Of City", submitted to you under date of November 14, 1949, the following additional information is submitted to you.

1. Flow from Utah Oil Refining Company, furnished by Mr. Clark on November 26, 1949. *9000/d*
Flow from Refinery 800 to 1100 gallons per minute (1.8 to 2.5 cfs.)
Upstream from Refinery discharge point, 800 gallons per minute, more or less (1.8 cfs.)
Refinery requirement four to six cubic feet per second. *6400/d*
2. Flow from Union Pacific Railroad Shops, furnished by Mr. Godfrey on November 26, 1949.
Combined flow 1.4 cubic feet per second
Maximum capacity required 3 cfs.
3. Flow from Ice Plant *no pollutants.*
No information received from Utah Ice & Storage Co.

The above information of required capacity in a pipe line will not materially change the preliminary studies submitted to you on November 14.

Based on the meeting held in your office on November 14, a pipe line to carry wastes of sulphur water, some storm water, railroad and refinery oily wastes and ice plant water would

Hon. John B. Matheson

-2-

Page 1 has
~~X~~ status

start at 7th West near 9th North and run westerly and northerly to a point 2,000 feet north of 9th North. The data are as follows:

Length of pipe	7,050 feet
Pipe - 36-inch vitrified clay	
Cost per foot	\$29.67
Total cost	\$210,000.00
Discharges as follows:	
Drainage - storm, etc	2.0 cfs.
From Ice Plant	1.0 cfs.
Sulphur water	3.0 cfs.
U.P.R.R.	3.0 cfs.
Utah Oil Co.	6.0 cfs.

Proportionate costs would be as follows:		
Ice Plant	6.7%	\$14,070.00
City	33.3%	69,930.00
U.P.R.R.	20.0	42,000.00
Utah Oil	40.0	84,000.00
Total	100.0%	\$210,000.00

Respectfully yours,

City Engineer

MEM:bw

104
X

November 14, 1949

PRELIMINARY REPORT ON DRAINAGE PIPE
LINES FOR NORTHWEST PART OF CITY

Statement of the Problem:

The area beginning at 4th West and 5th North Streets and extending northerly into Davis County and Westerly to the Jordan River is crossed by a number of open drains which carry storm water, warm sulphur water, wastes from Union Pacific Railroad Shops, waste water from ice loading plant at 4th North and 4th West, wastes from Utah Oil Refining Company, and in emergency, sanitary sewage from Sewage Pumping Station at 9th North and 11th West. The sewage from the Pumping Station is normally carried through a 60-inch diameter concrete pipe line, to a point in Davis County about one mile north of the City Limits, where sewage from the City Gravity Outlet Sewer, open drain canal and pumped sewage join and flow into the Northwest Drainage Canal.

oily
acid
wastes
see page
8 of report

The area north of 9th North and west of 8th West is being considered for extensive development, which means that troublesome wastes now being carried in open drains must either be excluded from the drains or carried in pipe lines to a point beyond expected development.

Consideration must be given to the future construction of a sewage disposal plant, which precludes the construction of one pipe line or conduit to carry all wastes north of 9th North Street, since the load on a disposal plant must be kept to a minimum, and sulphur water and oily wastes would seriously impair the operation of such a plant.

The Sulphur water and oily wastes must be carried in a pipe which will not be disintegrated by their chemical action. The best pipe found for carrying such wastes is vitrified clay or reinforced concrete lined with vitrified clay liner plates.

Pipe Lines Required:

Three separate wastes must be provided for: sanitary sewage, storm water, and oily wastes and sulphur water. Consideration must also be given to the location for a future gravity outlet sewer which will have to be constructed adjacent to pipe lines carrying the above wastes, so that there will be no interference with such construction.

Consideration has been given to the construction of four pipe lines, a 72-inch diameter reinforced concrete pipe line to carry pumped sewage; a 48-inch diameter reinforced concrete pipe line for storm water; a 36-inch diameter vitrified clay or a reinforced concrete pipe lined with vitrified clay liners to make a 36-inch diameter pipe for sulphur water and oily wastes; and a reinforced concrete pipe lined with vitrified clay liners, starting with 36-inch diameter and increasing to 60-inch diameter, to carry combined sulphur water, oily wastes and storm water.

Pages 1 + 10
have ~~X~~ Important
November 14, 1949
Status

Pipe Line No. 1.

This pipe line would carry sewage pumped at the Pumping Station, 9th North and 11th West Streets in a pipe line parallel with the existing 5-foot diameter concrete pipe line now carrying sewage from the Pumping Station. The existing pipe line at many times is required to carry its maximum capacity of approximately 30 second feet. A new pipe line will have to be constructed before the open drain ditch north of the Pumping Station can be filled in, because it is used as an emergency outlet whenever the existing pipe line cannot be used.

The existing pipe cannot now carry the sewage which may be pumped by operating the two 40-second foot pumps at the same time, and accordingly a pipe of 6-foot diameter reinforced concrete is proposed, which will carry such discharge, the length to be approximately 16,000-feet. Approximate quantities and costs are as follows:

Trench excavation and backfill	
37,900 cubic yards at \$1.50	\$ 56,800.00
Furnish and lay 72" R.C.P.	
16,000 lineal feet at \$33.00	528,000.00
Gravel in bottom of trench	
6,400 tons at \$3.00 per ton	19,200.00
Omissions, Contingencies and engineering 20%	<u>120,800.00</u>
Total estimated cost	\$ 724,800.00
Cost per lineal foot	\$ 45.30

In order that the sewage may be confined within pipe lines to the present point of discharge in Davis County, the entire length of 16,000 lineal feet of pipe will have to be constructed.

Pipe Line No. 2.

This pipe line would carry wastes from the U. P. Railroad Shops, waste from Utah Oil Refining Company, sulphur water wherever intercepted, storm water draining to vicinity of 4th West and 5th North, and waste water from ice loading docks near 4th North and 4th West. The probable maximum flow at 7th West north of 9th North and below the inflow from the Refinery would be about 10-second foot as follows:

From ice plant	0.5	cfs
Drainage to 5th No. at 4th West	2.0	"
From Wasatch Springs (sulphur water)	3.0	"
From U.P.Shops (combined flow)	3.5	"

From Utah Oil Refinery

1.1 cfs

Total 10.1 cfs

Additional maximum flow to be carried in the pipe line between the above point and the end of the line approximates 5-second feet. Under the contract between Salt Lake City and Utah Oil Refining Co., the City must provide capacity for 6-second feet for the Refinery, which will require a total capacity at the end of the pipe of 21-second feet. A pipe line smaller than 36-inch diameter will not carry the required flow of 15-second feet at 7th West and 9th North.

Subject to detailed study and measurements of inflows, it is proposed that a 36-inch diameter pipe line of vitrified clay or reinforced concrete with vitrified clay liner plates be constructed for a length of approximately 22,600 feet. Approximate quantities and costs are as follows:

Trench excavation and backfill	
23,000 cubic yards at \$1.50	\$ 34,500.00
Furnish and lay 36" vitrified clay pipe	
22,600 lin. ft. at \$22.50	508,500.00
Gravel in bottom of trench	
5,600 tons at \$3.00	16,800.00
Omissions, contingencies and engineering 20%	<u>112,000.00</u>
Total estimated cost	\$ 671,800.00
Cost per lineal foot	\$ 29.67

By using reinforced concrete pipe with vitrified clay liners the costs are as follows:

Trench excavation and backfill	
23,000 cubic yards at \$1.50	\$ 34,500.00
Furnish and lay concrete pipe with tile liners 36" diameter,	
22,600 lin. ft. at \$18.00	406,800.00
Gravel in bottom of trench	
5,600 tons at \$3.00	16,800.00
Omissions, contingencies and engineering 20%	<u>91,600.00</u>
Total estimated cost	\$ 549,700.00
Cost per lineal foot	\$ 24.32

Approximately one-half of the pipe line or 11,000 feet would have to be constructed to remove the wastes to a point 4,000-feet north of 9th North Street.

Pipe Line No. 3.

This pipe line would carry drainage from the areas adjacent and to the east of the above proposed pipe line and also discharge from existing storm sewers and ditches. The additional estimated flow considered north of 9th North, would approximate 7-second feet. After including the flow of existing storm sewers, a capacity of approximately 25-second feet is required, which can be carried in a 48-inch diameter pipe.

Subject to detailed study and measurements of inflows, it is proposed that a pipe line be constructed for a length of approximately 16,900 feet of 48-inch diameter reinforced concrete pipe. Approximate quantities and costs are as follows:

Trench excavation and backfill	
27,600 cubic yards at \$1.50	\$ 41,400.00
Furnish and lay 48" diameter R.C.P.	
16,900 lineal feet at \$18.00	304,200.00
Gravel in bottom of trench	
5,000 tons at \$3.00	15,000.00
Omissions, contingencies and engineering 20%	<u>72,100.00</u>
Total estimated cost	\$ 432,700.00
Cost per lineal foot	\$ 25.60

Approximately 5,200 lineal feet of pipe line would have to be constructed to remove the storm drainage to a point 4,000 feet north of 9th North Street.

Pipe Line No. 4.

This pipe line would carry the combined flow of sulphur water, oily acid wastes and storm water. It would consist of 36-inch diameter pipe of reinforced concrete lined with vitrified clay liner plates to a point where the storm sewer at 9th North and 9th West enters the open drain, and 60-inch diameter pipe of reinforced concrete lined with vitrified clay liner plates from that point to the end of the pipe line. Approximate quantities and costs are as follows:

Trench excavation and backfill	
36,000 cubic yards at \$1.50	\$ 54,000.00

Utah 0.2
K

SALT LAKE CITY, UTAH

Report on Sewage Disposal

City Commissioners

Earl J. Glade, Mayor

John B. Matheson

L. C. Romney

D. A. Affleck

Fred Tedesco

--

W. D. Beers, City Engineer
Louis E. Holley, City Auditor

Greeley and Hansen
Engineers
Chicago 4, Illinois

December, 1947

<u>Month</u>	<u>(Water Consumption per Month- 1,000 Cubic Feet)</u>			
	<u>Brewery</u>	<u>Bottle House</u>	<u>Office</u>	<u>Total</u>
<u>1946</u>				
August	2,497	1,875	191	4,563
September	2,811	2,541	201	5,553
October	2,553	2,070	217	4,840
November	2,420	2,774	101	5,295
December	2,440	2,197	34	4,671
<u>1947</u>				
January	2,112	2,035	49	4,196
February	2,160	1,895	51	4,106
March	2,230	1,730	45	4,005
April	2,547	2,313	67	4,927
May	2,585	2,082	133	4,800
June	2,460	1,823	238	4,621
July	<u>2,338</u>	<u>1,653</u>	<u>188</u>	<u>4,179</u>
Totals	29,153	24,988	1,515	55,756

(f) Employees, 65 to 80.

Wastes from the brewing of 15,000 barrels of beer per month will have a population equivalent of about 4,600.

Utah Oil Refining Company

An inspection visit was made to the Utah Oil Refinery August 20, 1947. Mr. Hugh Thompson, Chemical Engineer, answered ques-

tions and showed us around.

Three drainage lines flow west from the refinery grounds. One drain, Drain No. 3-D, near North end, originating at Gambusia Rearing Ponds, is supposed to be entirely enclosed and to receive no wastes as it crosses the plant site.

Two pipe lines discharging into Drain No. 3, just north of 9th North Street carry most of the waste drainage from the refinery. One pipe carries mainly condenser and cooling water. The other pipe takes the effluent from an oil separator comprising 4 tanks each 37x10x4 feet deep equipped with mechanical sludge collectors and oil skimmers of the endless chain type. Casual observations during the inspection trip seem to indicate a very low operating efficiency for these tanks. The effluent was quite dark and had considerable oil in it.

Observations in the Drainage ditch at the point of discharge also indicated that considerable oily material was being discharged.

Measurements of the flows from the refinery made on August 22, 25, and 27, indicate the total flows as follows:

<u>Date</u>	<u>Gallons per Minute</u>
8-22-47	740
8-25-47	1000
8-27-47	635

But prior
to 1947?

The wastes contain upwards of 700 parts per million of chlorides, as much as 1,300 parts per million of suspended solids, and have a pH ranging from 6.9 to 8.2.

Drain No. 3 flows northwesterly into City Drain No. 2 which eventually enters the open outfall sewer just above the Jordan River syphon.

In addition to the foregoing there are two additional items of waste products:

(a) Lime sludge from a water softening plant which is hauled away, although the filter backwash water carries considerable into the drains.

(b) Spent Acid - sulphuric acid - some losses into drains, but most of this acid waste is hauled to a dump in field pits. It is rumored that much of the spent acid is dumped directly into drainage lines near the open outlet sewer. This causes odor troubles.

Packing Plants South of Salt Lake City

There are several slaughter houses and packing plants south of Salt Lake City limits, which discharge their wastes into Jordan River, including the following:

- a) Joe Doctorman & Son Packing Co., 3400 S. 9th West
- b) Joe Doctorman & Son Packing Co., 2900 S. 2nd West
- c) Archie McFarland & Sons, 2922 S. State
- d) A. Bills & Company in Sandy
- e) Granite Meat - in Murray (Has own disposal plant)

A new plant not yet in operation.

Doc #22, Item #175
Answer 104(e) response

SALT LAKE CITY, UTAH

Report on Sewage Disposal

City Commissioners

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Engineers
Chicago 4, Illinois

December, 1947

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In addition to the total population, it is also important to determine the distribution of population into various sewer districts. Such population distribution data are given in Table 7. The present population distribution has been estimated on the basis of registration of voters in the various voting precincts and in part on the basis of house counts reported in the W.P.A. Real Property Survey report of August, 1941. The forecasted future population distribution has been based upon present densities and anticipated future land uses.

6. Industrial Development and Sewage Contributions

The industries which should be given consideration in connection with sewage disposal include the following:

a) Packing Plants

1. Cudahy Packing Co. (in Davis Co. north of city)
2. Block & Guss (in city tributary to gravity sewer)

b) Brewery in City. Fisher Brewing Co.
(tributary to sewage pumping station)

c) Utah Oil Refining Co. Large quantities of water discharged into city outfall sewer canal

d) Packing Plants. In county south of city

e) Metal Working Plants. (Tributary to both sewers)

f) Creameries

g) Bottling Works

TABLE 7

Population Distribution

Sewer District	Area in Acres		Population Density Persons per Acre		Population	
	Present	Future*	Present	Future	Present	Future
1	327	327	9.0	13.0	2,940	4,240
2	595	667	4.5	12.0	2,670	8,000
3	2,100	2,300	6.0	11.0	12,600	25,100
4**	510	1,075	14.0	13.9	7,170	15,000
5	1,895	2,840	12.9	18.0	24,560	51,000
6	784	784	11.0	16.0	8,620	12,500
7	617	617	12.5	15.0	7,700	9,240
8	153	153	6.0	9.0	920	1,380
9	258	258	12.0	14.0	3,100	3,600
10	23	23	13.0	14.0	300	320
11	2,220	3,580	4.0	9.0	8,830	32,000
12	955	955	12.0	12.0	11,450	11,450
13	235	1,340	8.5	9.0	2,000	12,050
14	63	500	1.6	9.0	100	4,500
15	497	1,060	10.0	14.0	4,970	14,830
16	440	440	16.0	20.0	7,040	8,800
17	1,770	1,930	18.5	24.0	32,800	46,400
18	161	161	7.0	13.0	1,120	2,080
19	1,465	2,025	19.0	25.0	27,800	50,380
20	428	428	1.0	5.0	430	2,130
Total	15,496	21,463	10.3	14.6	160,000	300,000
S.S. Lake					<u>7,160</u>	<u>15,000</u>
Total, including S. S. Lake.					167,160	315,000

* Does not include areas west of the Jordan River not sewered at present, except an area tributary to the Redwood Road Sewer estimated on a basis of 5,000 G.A.D.

** Sewer District Number 4 is South Salt Lake Town and is outside the city boundary.

There is some evidence that an active industrial development may be expected in the future.

Cudahy Packing Co.

This plant is located just west of the D. & R.G.W.R., and U.P. Ry. about $1\frac{1}{2}$ miles north of the Davis County line. The Salt Lake Union Stock Yards are immediately to the north of the packing plant and should be included in the consideration of sewage disposal. There is an agreement with the City relative to disposal of industrial wastes into the city sewage canal.

The Packing Co. receives its water supply from wells operated by the Union Stock Yards Co. The average daily quantity of water used was reported verbally to be as follows:

- a) Statement by the Packing Plant Superintendent -
300,000 gallons per day
- b) Statement by a Mr. Mitchell of the Union Yards -
475,000 to 500,000 gallons per day pumped from
15 wells of which about 300,000 gallons per
day goes to the Packing Plant and 200,000
gallons per day to stock watering and to
washing down pens.

The Plant Superintendent, Mr. Robert Lein, furnished the following data on sewage flows from the killing floor:

<u>Hour of Day*</u>	<u>Total Gallons*</u>	<u>Computed Rate G.P.M.</u>
8 to 10 A.M.	29,520	246
10 to noon	29,520	246
N. to 2 P.M.	24,000	200
2 to 4 P.M.	37,200	310
4 to 6 P.M.	29,520	246
6 to 8 P.M.	24,000	200
8 to 10 P.M.	10,800	90
10 to midnight	10,800	90
M. to 2 A.M.	6,000	50
2 to 4 A.M.	6,000	50
4 to 6 A.M.	6,000	50
6 to 8 A.M.	<u>10,600</u>	<u>88</u>
Total	234,160	163 (Ave.)

*Data given by Mr. Lein

The sewer from the killing floor discharges into a grease separator, a tank about 35 feet long, 5 feet wide, and 4 feet deep. Visual observations at 2:30 P.M. August 20, 1947, indicated poor efficiency of operation of this separator.

In addition to the sewer from the killing floor, a second sewer carries paunch washings into a manure trap basin, and a third sewer carries the domestic sewage to a point of discharge into the outlet drain (Drain 119) beyond the two traps or separator tanks.

Mr. Lein stated that in the future the plant would operate up to the plant capacity determined by the ratings permitted by the Animal Inspecting Bureau of the Department of Agriculture

which he stated that for this plant are as follows:

Cattle	28	an	hour
Hogs	130	"	"
Sheep	120	"	"
Calves	40	"	"

He classified the plant as a simple species plant, namely, only one type of animal is killed at one time, and estimated the following hours of killing per week (5 days) for each type of animal:

Cattle	-	20	hrs.	or	560	animals	per	week
Hogs	-	10	"	"	1300	"	"	"
Sheep	-	5	"	"	800	"	"	"
Calves	-	5	"	"	200	"	"	"
Total Animals					2,660	per week		

Mr. Lein stated that during the last year or two O.P.A. regulations have not permitted them to operate at full capacity.

The City Department of Health has furnished the following figures for recent operations of this plant:

<u>July, 1947</u>	<u>Actual</u>
Cattle	1,532
Sheep	1,298
Hogs	147
Calves	<u>841</u>
Total	4,233

The Union Stock Yards discharge considerable dirty water into Drain 119 below the outlet of the Packing House sewers. Mr. Mitchell, an employee, estimated the water used by the

Salt Lake Union Packing Company Yards at about 200,000 gallons per day. This water, in part runs through drinking water troughs, thence to waste and in part is used to wash from time to time the floors of the pens.

During the time of the visit there was no washing of floors in pens. The flow in the open ditch below the sewer outlets appeared to be much greater than the 475,000 to 500,000 gallons per day stated by Mr. Mitchell. High growth of weeds and grass made it quite difficult to make any close estimates of flow or to locate sources of ground water contributions. The drainage lines through the Stock Yards and Packing Plants are all underground closed lines difficult to locate. It is possible that drainage from irrigation channels gets into Drain 119 in addition to the flow and seepage from the Stockyards and the Packing Plant.

At the time of the field inspection (August 18, 1947) the entire strong and odorous flow from Drain 119 had been diverted into the Old Sewer Outlet by farmers to the northwest who use this packing house sewage for irrigating. These farmers have a lease to use certain city lands and the privilege to use city sewage for irrigating water.

Inasmuch as these two plants are outside the city limits, the city is under no obligation to treat their wastes. Packing-house wastes are very strong and require considerable more

treatment than domestic sewage.

We estimate that the wastes from the Cudahy Packing Company would have a population equivalent of about 8,500.

Block & Guss Packing Plant

This is a small plant located at 1672 Beck Street with a sewer connecting into the main gravity outlet sewer in Beck Street at this point.

The following data was furnished to use by Mr. Block on a visit made August 20, 1947:

Cattle	-	400	per month
Lambs	-	700	" "
Calves	-	250	" "
Hogs	-	None	

Water bill average \$60.00 per month, \$86.00 for July, 1947.

At this plant the blood, washing water, and all the paunch manure is washed into the sewer. The offal and miscellaneous items are carefully collected into a dry basin and disposed of to a rendering plant.

The kill is small and the wastes from this plant would have little effect upon the sewage characteristics from a city the size of Salt Lake City. The paunch manure should not be permitted to enter the sewer.

Fisher Brewing Company (10th West and 2nd South)

The liquid wastes from this plant are discharged into a sewer tributary to the sewage pumping station. A visit to the

plant resulted in the following data furnished by Mr. Bill Fisher:

(a) Mash is used for cattle feed while the hops are burned.

(b) Wash water from the brewery and a bottling plant is discharged into the sewer.

(c) In the bottling plant the bottles are washed in cleaning tanks in which the cleaning solution is changed from time to time. A loading is equal to about 80 hours of bottling. For each loading, cleaning chemicals are used as follows:

600 lbs. caustic soda
90 lbs. borax
40 lbs. phosphate
4 cleaning tanks, 2,500 gallons,
total 3 $\frac{1}{2}$ % caustic
70-80 lbs./day to maintain
50 loadings per year

(d) The brewing of beer from Aug., 1946 to Aug., 1947 was about 112,000 barrels (31 gal. each). A new 6,000 barrel storage cellar will increase the plant output about 20 per cent, namely, 20,000 to 23,000 barrels per year. Production varies seasonally about as follows:

10,000 barrels in Dec., 1947
15,000 " " July and August,
namely, variation of about 50%

It requires a minimum of 6 to 7 weeks to produce properly aged beer.

(e) Water consumption quantities were taken from monthly water bills as follows:

<u>Month</u>	(Water Consumption per Month- 1,000 Cubic Feet)			
	<u>Brewery</u>	<u>Bottle House</u>	<u>Office</u>	<u>Total</u>
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(f) Employees, 65 to 80.

Wastes from the brewing of 15,000 barrels of beer per month will have a population equivalent of about 4,600.

Utah Oil Refining Company

An inspection visit was made to the Utah Oil Refinery August 20, 1947. Mr. Hugh Thompson, Chemical Engineer, answered ques-

tions and showed us around.

Three drainage lines flow west from the refinery grounds. One drain, Drain No. 3-D, near North end, originating at Gambusia Rearing Ponds, is supposed to be entirely enclosed and to receive no wastes as it crosses the plant site.

Two pipe lines discharging into Drain No. 3, just north of 9th North Street carry most of the waste drainage from the refinery. One pipe carries mainly condenser and cooling water. The other pipe takes the effluent from an oil separator comprising 4 tanks each 37x10x4 feet deep equipped with mechanical sludge collectors and oil skimmers of the endless chain type. Casual observations during the inspection trip seem to indicate a very low operating efficiency for these tanks. The effluent was quite dark and had considerable oil in it.

Observations in the Drainage ditch at the point of discharge also indicated that considerable oily material was being discharged.

Measurements of the flows from the refinery made on August 22, 25, and 27, indicate the total flows as follows:

<u>Date</u>	<u>Gallons per Minute</u>
8-22-47	740
8-25-47	1000
8-27-47	635

The wastes contain upwards of 700 parts per million of chlorides, as much as 1,300 parts per million of suspended solids, and have a pH ranging from 6.9 to 8.2.

Drain No. 3 flows northwesterly into City Drain No. 2 which eventually enters the open outfall sewer just above the Jordan River syphon.

In addition to the foregoing there are two additional items of waste products:

(a) Lime sludge from a water softening plant which is hauled away, although the filter backwash water carries considerable into the drains.

(b) Spent Acid - sulphuric acid - some losses into drains, but most of this acid waste is hauled to a dump in field pits. It is rumored that much of the spent acid is dumped directly into drainage lines near the open outlet sewer. This causes odor troubles.

Packing Plants South of Salt Lake City

There are several slaughter houses and packing plants south of Salt Lake City limits, which discharge their wastes into Jordan River, including the following:

- a) Joe Doctorman & Son Packing Co., 3400 S. 9th West
- b) Joe Doctorman & Son Packing Co., 2900 S. 2nd West
- c) Archie McFarland & Sons, 2922 S. State
- d) A. Bills & Company in Sandy
- e) Granite Meat - in Murray (Has own disposal plant)

A new plant not yet in operation.

No visit was made to these plants, but the following typical data on kills will indicate the magnitude of these plants:

<u>Doctorman No. 1 (July, 1947)</u>	<u>Doctorman No. 2 (May, 1947)</u>
-------------------------------------	------------------------------------

Cattle - 344	Cattle - 391
Sheep - 80	Sheep - 169
Veal - 114	Veal - 140
Hogs - None	Hogs - None

Archie McFarland & Sons

Federally inspected about same capacity as Cudahy.

A. Bills & Co. (July, 1947)

Cattle - 261
Sheep - 369
Hogs - 144
Calves - 159

Granite Meat in Murray (July, 1947)

Cattle - 594
Sheep - 289
Hogs - 3
Calves - 162

Inasmuch as wastes from these plants do not enter the city sewers, they have no special bearing upon the problem of sewage disposal for Salt Lake City.

Metal Working Plants

There are a considerable number of foundries, machine shops, structural steel works, and other metal working plants, some of which quite likely discharge substantial quantities of waste waters into the sewerage system. Some index of the waste quan-

titles is shown by data on large water users.

There is, however, no evidence that any unusual quantities of wastes are produced by these industries.

Some of the large plants are as follows:

<u>Name</u>	<u>Address</u>	<u>Employees</u>
American Foundry & Machine Co.	870 S. 4th West	150
Armco Drainage & Metal Products Co.	631 S. 3rd West	-
Carrer Sheet Metal Works	134 W. Broadway	25
Christensen Machine Co.	1975 S. 2nd West	75
Eimco Corporation	634 S. 4th West	-
Industrial Steel Co.	475 W. 6th South	30
The Land Co., Inc.	267 W. 1st South	150
Lundin & May Foundry Co., Inc.	454 W. 5th North	35
Salt Lake Cabinet & Fixture Co.	136 S. West Temple	75
Structural Steel & Forge Co.	545 W. 7th North	-
Linde Air Products Co.	-	-

The chief constituent of wastes from metal working plants which should not enter the sewers is pickle liquor.

Creameries

Several creameries operate within the city limits, the largest including

Arden-Sunfreze Creameries, 1030 S. Main St.
Brooklawn Creamery Co., 260 S. 1st West
Mountain States Creamery Co., 226 W. South Temple

The City Engineer, the City Health Department, and the Chamber of Commerce reported these to be not exceptionally large, so their wastes may be considered as a normal component of city sewage.

Bottling Works

A number of bottling plants discharge a limited amount of wash water into sewers. These plants include the following, among others:

Canada Dry Bottling Co. of Utah, 25 S. 3rd East
Birrell Bottling Co., 264 Glendale Ave.
Coca-Cola Bottling Co. of Utah, 875 S. West Temple
Mission Orange Bottling Co., 235 E. 5th South
Nehi Beverage Co. of Utah, 155 E. 1st South

Summary

The Cudahy Packing Plant wastes and the Fisher Brewing Company wastes are the two most important industrial wastes which need be considered for sewage disposal. Any treatment plant should include capacity for the brewery wastes. Inclusion of the wastes from the Cudahy Packing Company after some pretreatment at the packing plant is a matter of city policy.

It would appear that the oil refinery wastes should not be taken into any sewage treatment plant. (1) Objectionable quantities of oil, spent acids, and lime sludge may be removed more economically at the refinery than in any sewage treatment plant. (2) Oils and phenols from the refinery would cause trouble and considerable operating expense. (3) There appears to be no

serious objection to discharging these wastes into open drains, after proper treating, at the refinery.

The several slaughter houses in the county south of Salt Lake City would be part of the problem of the disposal of the sewage of Salt Lake City Suburban Sanitary District and should be considered in connection with that district.

7. Climatology

Salt Lake City has a semi-arid climate with definite wet and dry seasons requiring extensive irrigation during the warm months of the year.

Average monthly precipitation for the period 1874-1946 and average monthly temperatures for the period 1920-1947 are as follows:

Month	Precipitation in Inches	Average Temperature Degrees F.
January	1.31	29.2
February	1.46	33.8
March	1.95	41.7
April	2.00	49.6
May	1.86	57.4
June	0.84	67.4
July	0.56	75.7
August	0.85	74.5
September	0.88	64.4
October	1.52	52.5
November	1.43	41.1
December	1.42	31.9

11. Existing Sewerage

Salt Lake City is sewerred on the separate system, storm water being discharged into the nearest waterways through open drains and a number of closed conduits, and the domestic sewage and industrial wastes being collected through a system of sanitary sewers and discharged into an open canal known as the Northwest Drainage Canal, which extends from near the center of Section 11, R1N, T1W, westerly to a siphon under the Jordan River, thence northwesterly to an outlet in Great Salt Lake.

The sanitary sewer system is made up of two main divisions, the Gravity System and the Pumping System. The main gravity outlet sewer starts at 4th East and 9th South and extends northwesterly to about 4th West and 9th North, thence north to Beck Street, thence northwesterly along and near Beck Street to a point of discharge into the upper end of the Northwest Drainage Canal about one-half mile south of the Cudahy Packing Plant and west of the railroad tracks.

The main trunk sewer of the pumping system starts at 27th South and Highland Drive and extends west to West Temple, thence north to 13th South, thence west to 7th West, thence north and west to the pumping station located at 9th North and 11th West. The pumping station raises the sewage approximately 18 feet and then it flows through a 60-inch closed conduit for approximately 16,000 feet, then through an open canal to a point of discharge

into the Northwest Drainage Canal, approximately one mile west of the outlet of the gravity sewer.

As presently arranged, approximately one-third of the city area, which is sewered at this time, is tributary to the gravity sewerage system and two-thirds to the pumping system. Considerable areas in the southeasterly portion of the city are of sufficient elevation to be discharged by gravity if a gravity outlet sewer were available.

The general arrangement plan of the sewerage system within the city limits is illustrated by Figure 7 and areas of various districts of the sewered part of the city are given in Table 7.

It appears from these data (Table 7 and Figure 7) that 15,496 acres presently included in the city is provided with sanitary sewers. Extensions of sanitary sewers are likely to serve additional areas aggregating a total of approximately 5,400 acres to the east and north of the presently sewered areas as illustrated by Figure 7.

Computations of sewer capacity related to the tributary area have been made at various points along the trunk line sewers and for certain major branch sewers. The sewer capacities have been computed on the basis of the diameter of the sewers and the sewer grades, assuming a roughness coefficient equivalent to a "Kutter's n of 0.015". The results of these computations are given in Table 18. A comparison of the per acre capacity and

lated to the future areas which may become tributary are as follows:

	Sewer Capacity	
	Present	Future
M.G.D.	8.2	8.2
Gal./Day/A.	35,000	2,930
(a) Area within City-Acres	235	1,600
(b) Plus outside Area- Acres	0	1,200

These computations indicate that the existing sewer along Redwood and 9th North Streets has insufficient capacity to provide a reasonable per acre capacity for the possible sewered area beyond the present city limits to the west and south. No relief, however, will be needed until the tributary area becomes considerably well built up and this will probably not be the case for many years in the future.

12. Receiving Waterways and Their Uses

All of the City's sewage is collected in two main sewers, one of which flows all the way by gravity to an open ditch just north of the city limits and the other which collects in a pumping station and is raised to a higher level and then flows by gravity to the same ditch. These two uncovered ditches unite to form the sewage canal. The sewage is siphoned under the Jordan River and then flows in a northwesterly direction to Great Salt

lake. For the first nine miles the sewage is confined within the banks of the canal. In past years part of the sewage has been used for irrigation but this is not now allowed by the City Engineer's office.

About four miles above the inlet into Great Salt Lake the sewage spreads out into a vast swampy area and flows slowly through several channels. A considerable amount of grass and other vegetation including a few scrubby trees are found throughout the swamp and along the edges of the channels.

The sewage from these marshy areas again collects into a main channel and then flows out through the sand, finally re-dividing into two or three smaller channels and then flowing out into the bay of Great Salt Lake.

On September 30, 1947, a trip down the canal and over the surrounding area was made in a chartered plane. The plane cabin was enclosed so that it was impossible to make any observations of odors.

The area traversed by the canal is very sparsely settled, only 1 farm being observed. The soil is highly alkaline and the ground water level is high. Thus this area in its present state is not suitable for agricultural development.

The surface of the canal was covered at many points by dark brown oil which presumably was discharged from the Utah Oil Refining Company. At one or two points in the canal small floating

pieces of black sludge were observed. No gas bubbles or other signs of active decomposition were observed in the canal.

The sewage eventually enters Great Salt Lake. In flying over the lake no extensive areas of sludge banks were observed. The water was discolored somewhat and there were considerable areas covered with an oil slick. Gulls were observed fishing in the lake and in the sewage field where the canal has spread out to form a marshy area.

Antelope Island is no longer an island but due to the recession of the level of Great Salt Lake it has become joined to the mainland on the south, thus creating a bay.

The canal appears to have sufficient capacity and also appears to have been excavated in material which stands except nearer the lower reaches. At this point it is uncertain whether or not the banks have failed or accumulation of sludge deposits have caused overflow of the banks to form the marsh.

The beaches at Saltair and Black Rock are too far from the point of discharge of the canal to be affected by sewage contamination and the high concentration of salt in the water exerts considerable bacteriocidal action.

13. Need for Sewage Treatment

The need for sewage treatment is customarily determined by the need to protect reasonable use of the receiving watercourse, the need to remedy existing insanitary conditions which endanger

Canal overflow

Sept. 9. 1927.

Honorable P. J. Moran,
Commissioner of Streets
and Public Improvements,
City.

Dear Sir:

As we have previously explained to you, the main drainage canal which carries all of the sewage, during high stages overflows its west bank from the outlet at Great Salt Lake for about a mile southerly. This is due to the fact that when the canal was enlarged all of the embankment was deposited on the east side.

From the Jordan River to the lake the channel is kept clean and scoured out by means of the Jordan River which is turned into the canal at the Jordan River headgates or the river siphon. When this extra head of water reaches the point where there is no embankment on the west side of the canal, instead of following the bed it overflows onto the land and actually silts up the channel. This difficulty can be overcome and the canal kept open by constructing a dike along this portion. The Summer-Baer Drainage Co. has a dragline in this vicinity now and has submitted a price of 25¢ per cubic yard for building this dike.

In a letter dated June 28 we acquainted you with these facts and asked that \$3,000 be appropriated to do the work. Subsequently the Jordan Fur & Reclamation Co. complained that part of their land is being damaged by reason of the fact that the sewage and oil waste which are carried through the canal, during periods of northwest wind are blown back upon their ground. This difficulty could be overcome by constructing a dike westerly along the shore of the lake from the outlet of the canal about 3,000 feet. The additional cost for this dike will be \$1,500.

I have a letter from the City Attorney dated Sept. 6 giving it as his opinion that the City is in no way liable for any damage caused by the discharge of sewage into the Great Salt Lake; and that in accordance with the contract which the Utah Oil Refining Co. has with the City the Oil Refining Company is liable for any damage caused by oil waste or refuse discharged from this source. It would, therefore, appear that the diking along the shore of the lake should be done by the New State Gun Club.

FILE

47D-2

I would, however, recommend that the diking along the west side of the canal be done while the dragline is available and that \$3,000 be appropriated for this work.

Respectfully,

HCJ:CF

City Engineer



ENGINEERING DEPARTMENT
SALT LAKE CITY CORPORATION

SALT LAKE CITY, UTAH

H. C. JESSEN,
CITY ENGINEER
TER O. CANNON
ENGINEER
JESSEN
SALT LAKE CITY

last
page

(A)!

August 2, 1926.

Mr. H. C. Jessen,
City Engineer,
City.

Dear Sir:

The following is a report of the investigation of the complaint of the Jordan Investment Co., #1-A - Tracts of land described as #1, 2, 2A and 4 show no signs of ever having been cultivated and have a growth of salt grass. The only use this could have been put to is for pasture, and grazing would have been poor. There is no evidence of a road over this ground and before the canal was constructed a large portion of this land was inundated. The drainage canal has enhanced the value of this land rather than damaged it.

#1. The old copper plant spur is entirely out of order, in fact there is no track that could be used. The spur has been disconnected for some time from the D. & R. G. W. main line for a distance of 125' and the switch taken out. The track to Marion Street is badly out of order and could not be used. West of Marion Street to the drainage canal part of the track is out and what is left is worthless. West of the drainage canal only 300' of the old track is left, all the rest has been hauled away. The grade is still there and if a new track were laid a bridge would be necessary to cross the drainage canal.

#2. The complaint must mean the SW 1/4 of Sec. 23 instead of the NW 1/4, as the NW 1/4 is described in #3. The drainage canal south of the north side of the SW 1/4 SEC. 23 for 3/4 the distance over the claimants property is along the east side of the old O. S. L. and Utah Oil Refining Company's ditch and at least 10' of the spoil bank on the west side of the drainage channel is in this ditch and should not be counted against the City for the right of way.

The width of the right of way in the complaint is excessive and measurement shows that for three fourths of the distance not more than 110' should be allowed considering 10' of the west side being in the old O. S. L. & Utah Oil Refining Company's ditch.

For the other one-fourth of the distance 115' should be allowed. The value placed on this land is excessive as the land was practically worthless for cultivation.

#3. The claimant must mean to the NW Cor. SW 1/4 Sec. 14. It appears from the map in the NW 1/4 of Sec. 23 that the drainage channel passes over the east end of tract #11 for a distance of about 500' and this is the only place where the drainage channel encroaches on claimant's land.

The width of right of way in the complaint is excessive as measurement shows a total width covering spoil banks of 108 ft. 10' of west spoil bank is in O.S. L. & Utah Oil Refining Co. ditch, making a width of 98' to be considered as right of way. The value placed on this land is excessive as the land was practically worthless for cultivation.

#4. The width of right of way is excessive as measurements show a total width covering spoil banks to be 120'. The land through this section is very poor and the drainage channel has enhanced the value rather than damaged it.

#5. This statement is far fetched and the conditions are the same as stated in #1A of this report. The City built a bridge across the drainage channel near the center line of Sec. 23 at the time the channel was constructed. This makes it possible to get to land on either side of channel.

#6. The width of right of way is excessive. Measurements show a total width covering spoil banks to be 108' from the south side of section 10 north to where the trunk sewer empties into the drainage channel and from this point to the Jordan River it is a width of 156'. This is the amount that should be allowed for right of way. This land grows nothing but salt grass and in some places is too barren for that.

#7. The irrigation canal was not interfered with in the construction of the drainage channel except at the river crossing.

#8. Have no knowledge of this.

#9. I see the necessity of at least one bridge across the drainage channel. I find no evidence of the 12" tile drain.

#10. The drain ditch to the south of the drainage channel was enlarged and deepened improving the drainage conditions to the south. The drain ditch to the north was not filled, but left open so as to run either into drainage channel or to the north. There has been no damage done, but a benefit to his drain ditch as the drainage channel is much lower and gives a better chance for the land all around this area to be drained.

8-2-26



#11. The sewage is a drawback to this district, but the drainage channel carries the oil, and refuse from the Utah Oil and O. S. L. North Yards to the lake where formerly the oil was turned into a slough near the center of Sec. 10, and during high water this oil was spread over the land making a menace to this section of the country.

The drainage channel has lowered the water plane and made it possible for this section of the country to be brought under cultivation, where before it was practically worthless land.

The information regarding the oil being turned into a slough was taken from Snyder's report.

Respectfully,

S. Janner

LT:CF

January 25, 1926

Honorable P. J. Moran
Commissioner of Streets
and Public Improvements,
City

Dear Sir:-

For a number of years the Utah Oil Refining Company has been discharging into the Gravity Outlet Sewer about 300,000 gallons of water from its refinery per day.

It is stipulated in the agreement dated September 12, 1922, that the refining company may discharge this quantity of water into the sewer pending the completion of the drain canal. Inasmuch as the canals are now completed, I would recommend that the Board of Commissioners instruct the Utah Oil Refining Company to divert the discharge from the Gravity Sewer into the drainage canals.

In this connection I desire also to call your attention to paragraph 7 of the agreement between the City and Salt Lake County Drainage District #2 as follows:

The district shall pay to the city as the district's share of the cost of maintenance and operation of said canals and drainage works, the sum of \$1000.00 annually on or before the 31st day of December of each year, commencing with the year 1925; provided, however, that if the city shall not construct said west branch canal, then the district's share of the maintenance and operation costs shall be fixed at the sum of \$700.00 annually.

Respectfully,

HCJ:NPS

ACTING CITY ENGINEER

File 47D-2

January 20, 1926

Honorable P. J. Moran
Commissioner of Streets
and Public Improvements,
City

Dear Sir:-

Pursuant to your request, we are furnishing you herewith information relative to the North-west Drainage Channels in Salt Lake County Drainage District No. 2.

The portion from the Great Salt Lake to the Jordan River syphon and from the Jordan River syphon to the outlet of the Gravity Sewer, together with the Jordan River head-gates, were constructed by the Street Department. The cost of this work, according to the Street Department books, is as follows: Main channel, \$37,372.16; Jordan River head-gates, \$3,017.15; Sewer outlet connection, \$2,805.39; a total of \$43,194.70. The remainder of the work, consisting of one channel on the west side of the river and two channels on the east side, Jordan River and Bonneville canal syphons, was let to Morrison-Knudsen Co. on January 15, 1926.

All of the work included in the original contract was completed in the early part of July, with the exception of Channel No. 1 on the west side of the river. Due to a misunderstanding between the Drainage District and the City, this work was not ordered. However, the contract was kept in effect by making the last payment a partial estimate and withholding a small sum of money. The amount paid to Morrison-Knudsen Co. to date is \$50,326.63. Of this amount \$5,119.68 was spent in the digging of a by-pass around a portion of Channel No. 2 and also in the work of restoring Beck's Springs. The total expenditure including engineering inspection on both the contract and the restoration work is \$52,105.87.

The agreement with the Utah Oil & Refining Company for use of the Channels in carrying waste water away stipulates the following payments: \$5,000.00 on demand at the beginning of the work; \$5,000.00 three months after the first payment; \$5,000.00 three months after the second payment and \$5,000.00 three months after the third payment, or a total of \$20,000.00. The City has no agreement with either the O. S. L. or D. & R. G. W. railroads relative to this drainage.

FILE

Accl. No. 47 D-2

The agreement with Salt Lake County Drainage District No. 2 requires the City to construct drainage channels as shown on the photographic print attached. The payments by the Drainage District to the City are to be made as follows: \$7,000.00 when the main outlet ditch is completed from the Lake to the Junction; \$15,500 when the drainage ditches on the east side of the Jordan River are completed and \$7,500.00 when the West Branch Canal is completed. Provision is also made as an alternative that in case the District shall not have sold the bond issue, then the payments shall be made in fifteen annual installments of \$2,000.00 each with interest at 6% on the payment of each unit on the date of completion of that particular unit. The drainage district has made no payment to the City to date.

The estimated cost of completing the Channel on the west side of the river is \$15,200.00. The estimated cost of back-filling the abandoned portion of Channel No. 2 is \$2,100.00. This will complete all of the work in connection with the drainage contract except what may be required to complete the restoration of Beck's Springs.

The difficulty with the Board of Supervisors has now been settled and the Drainage District is now prepared to proceed with the work on the west side of the river.

Respectfully,

HCJ:NPS

ACTING CITY ENGINEER

MEMORANDUM
TO THE CHAIRMAN
OF THE BOARD
OF COMMISSIONERS



December 4th, 1922.

Hon. T. T. Burton,

Mr. Sylvester, Councilman
City. Coms'r. of Streets & Public Improvements.

Dear Sir:

At a meeting of the Board of Commissioners held Sept. 20, 1922, your communication stating that the city has entered into a contract to care for the water of the Utah Oil Refining Co. and asking for authorization for the City Engineer to secure rights-of-way and proceed to determine the channel and do the preliminary work in connection with the drainage purposes, was taken up and filed and the authority asked for given.

Copy to
Auditor
Eng. -2- ✓

Yours very truly,

Respectfully,

Board of County Commissioners,

Clarence Cowan, Clerk

By

H. M. DeLeon
Deputy Clerk, City Recorder.

Engineering Department

REFERRED TO

SEP 22 1922

Salt Lake City, Utah.

47-17-2

W.A. LEATHAM
CITY RECORDER

H. WARREN SMITH
CHIEF DEPUTY

SALT LAKE CITY CORPORATION

SALT LAKE CITY, UTAH

SEP 13, 1922

~~SEP 14, 1922~~

Mr. Sylvester Q. Cannon,
City Engineer.

Dear Sir:-

At a meeting of the Board of Commissioners held Sept. 12th, 1922, the agreement with the Utah Oil Refining Company for the privilege of having its drainage water carrying oil refuse disposed of by and through drainage canal to be built by the city in proposed drainage district in the northwestern section of the city, was approved and the Mayor and myself were authorized to execute same in behalf of the City.

Copy to
Street Dept.
Engineer-2-
Auditor
Files

Respectfully,

W. A. Leatham
City Recorder.

Engineering Department
REFERRED TO
SEP 14 1922
Salt Lake City, Utah.

FILE

47-D. 2

THIS AGREEMENT, made and entered into this 12th day of September, A. D. 1922, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal.

NOW, THEREFORE, in consideration of the premises, and for the sum of \$1.00 in hand paid by each of the parties hereto to the other, and of other valuable considerations passing between the parties hereto, the receipt of which is hereby acknowledged, it is understood and agreed by and between the parties hereto that the party of the second part shall pay to the party of the first part, the sum of \$20,000.00, payable in four installments of \$5,000.00 each; the first installment to be paid on demand after construction work actually commences on the above referred to drain canal; the second installment of \$5,000.00 to be paid three months thereafter; the third installment of \$5,000.00 to be paid three months after said second installment has been paid; and the fourth installment shall be paid three months after the third installment has been paid; provided, however, that said four installments hereinbefore mentioned shall not become due and payable to first party by second party unless said first party commences and with reasonable diligence continues the construction of said drain canal. And in consideration of said payment by the party of the second part to the party of the first part, said party of the first part shall construct, or cause to be construct-

ty, above its own need, to carry the amount of water now being discharged by the party of the second part from its refinery and environs, or a total of six second feet; and said party of the first part agrees to carry the sewerage and waste-water of the party of the second part through said drain canal and dump the same into Great Salt Lake perpetually, unless said parties, or either of them, are restrained or otherwise prevented by legal proceedings from carrying said waters and discharging same into the Great Salt Lake, or some other suitable place.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further understood and agreed that party of the second part shall hold party of the first part harmless for and on account of any damages which may be assessed against it in any court proceeding, or otherwise, on account of the discharge into the Great Salt Lake of any oil or other refuse which may be carried or discharged through said drainage ditch coming from the refinery and environs of said party of the second part.

It is further agreed for the same considerations hereinabove mentioned, that the party of the second part shall have the right to discharge into the present sewer system of the first party, pending the completion of said drain canal not to exceed 50,000 gallons of the waste from the refinery per day.

It is further agreed, the parties hereto have caused this agreement to be executed by the appropriate officers of each on the day and year first above written.

SALT LAKE CITY,

Attest:

By C. C. Nesten
Mayor.

W. A. Leatham

City Recorder.

by W. H. Smith

UTAH OIL REFINING COMPANY,

Edw. C. Howard

SEP 13 1922

REFERRED TO

Engineering Department

LAW DEPARTMENT

SALT LAKE CITY CORPORATION

SALT LAKE CITY, UTAH

ALONZO W. WATSON
CITY PROSECUTOR
PUBLIC SAFETY BLDG.

WILLIAM H. FOLLAND
CITY ATTORNEY
MORACE H. SMITH
SHIRLEY P. JONES
ASSISTANTS
F.S. FERNSTROM
CLAIM AGENT
CITY & COUNTY BLDG.

September 13, 1922.

Mr. S. Q. Cannon,
City Engineer.

Dear Sir:-

I attach hereto copy of agreement entered into between the city and Utah Oil Refining Company in regard to the carrying of water and refuse from the oil refinery of said company and the construction of a drain ditch by the city for that purpose.

Yours truly,

William H. Folland
CITY ATTORNEY.

WHF:B

Enc.

*New Northwest Drain
for 4'-L-2*

Engineering Department
REFERRED TO
SEP 13 1922
Salt Lake City, Utah

47-D-2

THIS AGREEMENT, made and entered into this 12th day of September, A. D. 1922, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal.

NOW, THEREFORE, in consideration of the premises, and for the sum of \$1.00 in hand paid by each of the parties hereto to the other, and of other valuable considerations passing between the parties hereto, the receipt of which is hereby acknowledged, it is understood and agreed by and between the parties hereto that the party of the second part shall pay to the party of the first part, the sum of \$20,000.00, payable in four installments of \$5,000.00 each; the first installment to be paid on demand after construction work actually commences on the above referred to drain canal; the second installment of \$5,000.00 to be paid three months thereafter; the third installment of \$5,000.00 to be paid three months after said second installment has been paid; and the fourth installment shall be paid three months after the third installment has been paid; provided, however, that said installments hereinbefore mentioned shall not become due and payable to first party by second party unless said first party commences and with reasonable diligence continues the construction of said drain canal. And in consideration of said payment by the party of the second part to the party of the first part, said party of the first part shall construct, or cause to be construct-

912.571111
4-1-12
ty, above its own need, to carry the amount of water now being discharged by the party of the second part from its refinery and environs, or a total of six second feet; and said party of the first part agrees to carry the sewerage and waste-water of the party of the second part through said drain canal and dump the same into Great Salt Lake perpetually, unless said parties, or either of them, are restrained or otherwise prevented by legal proceedings from carrying said waters and discharging same into the Great Salt Lake, or some other suitable place.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further understood and agreed that party of the second part shall hold party of the first part harmless for and on account of any damages which may be assessed against it in any court proceeding, or otherwise, on account of the discharge into the Great Salt Lake of any oil or other refuse which may be carried or discharged through said drainage ditch coming from the refinery and environs of said party of the second part.

It is further agreed for the same considerations hereinabove mentioned, that the party of the second part shall have the right to discharge into the present sewer system of the first party, pending the completion of said drain canal, not to exceed 200,000 gallons of its waters from its refinery and environs.

IN WITNESS WHEREOF, the parties herein have caused this agreement to be executed by the appropriate officers of each on the day and year first above written.

SALT LAKE CITY,

Attest:

By L. C. Nesler
Mayor.

W. A. Leatham

City Recorder.

by W. H. Smith

UTAH OIL REFINING COMPANY,

by W. C. Howard

Engineering Dept.
REFERRED TO
SEP 13 1922

W.A. LEATHAM
CITY RECORDER
H. WARREN SMITH
CHIEF DEPUTY

SALT LAKE CITY CORPORATION

SALT LAKE CITY, UTAH

Sept. 13th, 1922.

Mr. Sylvester Q. Cannon,
City Engineer.

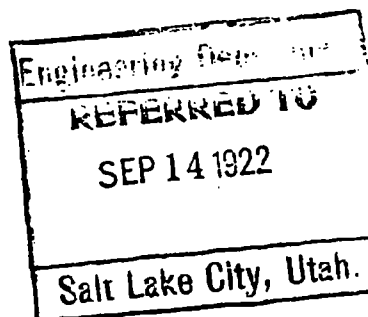
Dear Sir:-

At a meeting of the Board of Commissioners held Sept. 12th, 1922, the agreement with the Utah Oil Refining Company for the privilege of having its drainage water carrying oil refuse disposed of by and through drainage canal to be built by the city in proposed drainage district in the northwestern section of the city, was approved and the Mayor and myself were authorized to execute same in behalf of the City.

Copy to
Street Dept.
Engineer-2-
Auditor
Files

Respectfully,

W. A. Leatham
City Recorder.



FILE

47-D-2

C O P Y

A G R E E M E N T

THIS AGREEMENT, made and entered into this 12th day of September, A. D. 1922 by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal.

NOW, THEREFORE, in consideration of the premises, and for the sum of \$1.00 in hand paid by each of the parties hereto to the other, and of other valuable considerations passing between the parties hereto, the receipt of which is hereby acknowledged, it is understood and agreed by and between the parties hereto that the party of the second part shall pay to the party of the first part, the sum of \$20,000.00, payable in four installments of \$5,000.00 each; the first installment to be paid on demand after construction work actually commences on the above referred to drain canal; the second installment of \$5,000.00 to be paid three months thereafter; the third installment of \$5,000.00 to be paid three months after said second installment has been paid; and the fourth installment shall be paid three months after the third installment has been paid, provided, however, that said installments hereinbefore mentioned shall not become due and payable to first party by second party unless said first party commences and with reasonable diligence continues the construction of said drain canal. And in consideration of said payment.

THE SECOND PART, WITNESSETH:
THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal.

NOW, THEREFORE, in consideration of the premises, and for the sum of \$1.00 in hand paid by each of the parties hereto to the other, and of other valuable considerations passing between the parties hereto, the receipt of which is hereby acknowledged, it is understood and agreed by and between the parties hereto that the party of the second part shall pay to the party of the first part, the sum of \$20,000.00, payable in four installments of \$5,000.00 each; the first installment to be paid on demand after construction work actually commences on the above referred to drain canal; the second installment of \$5,000.00 to be paid three months thereafter; the third installment of \$5,000.00 to be paid three months after said second installment has been paid; and the fourth installment shall be paid three months after the third installment has been paid, provided, however, that said installments hereinbefore mentioned shall not become due and payable to first party by second party unless said first party commences and with reasonable diligence continues the construction of said drain canal. And in consideration of said payment by the party of the second part to the party of the first part, said party of the first part shall construct, or cause to be constructed, said drain

-2-

canal, and shall therein provide sufficient capacity, above its own need, to carry the amount of water now being discharged by the party of the second part from its refinery and environs, or a total of six second feet, and said party of the first part agrees to carry the sewerage and wastewater of the party of the second part through said drain canal and dump the same into Great Salt Lake perpetually, unless said parties, or either of them, are restrained or otherwise prevented by legal proceedings from carrying said waters and discharging same into the Great Salt Lake, or some other suitable place.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further understood and agreed that party of the second part shall hold party of the first part harmless for and on account of any damages which may be assessed against it in any court proceeding, or otherwise, on account of the discharge into the Great Salt Lake of any oil or other refuse which may be carried or discharged through said drainage ditch coming from the refinery and environs of said party of the second part.

It is further agreed for the same considerations hereinabove mentioned, that the party of the second part shall have the right to discharge into the present sewer system of the first party, pending the completion of said drain canal not to exceed 300,000 gallons of its waters from its refinery per day.

IT WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by the appropriate officers of each on the day and year first above written.

SALT LAKE CITY,

By C. Clarence Newlen

carrying said waters and discharging same into the Great Salt Lake, or some other suitable place.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further understood and agreed that party of the second part shall hold party of the first part harmless for and on account of any damages which may be assessed against it in any court proceeding, or otherwise, on account of the discharge into the Great Salt Lake of any oil or other refuse which may be carried or discharged through said drainage ditch coming from the refinery and environs of said party of the second part.

It is further agreed for the same considerations hereinabove mentioned, that the party of the second part shall have the right to discharge into the present sewer system of the first party, pending the completion of said drain canal not to exceed 300,000 gallons of its waters from its refinery per day.

IT WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by the appropriate officers of each on the day and year first above written.

SALT LAKE CITY,

By C. Clarence Nealen
Mayor

W. A. Leathan
City Recorder

UTAH OIL REFINING COMPANY

By John C. Howard
President

H. Warren Smith
Chief Deputy (S E A L)

W. B. Sage
Secretary (S E A L)

STATE OF UTAH)
) SS.
COUNTY OF SALT LAKE)

I, Ethel Macdonald, the duly appointed, qualified and acting Recorder of Salt Lake City, Utah, do hereby certify that the attached and foregoing is a full, true and correct copy of an agreement entered into September 12, 1922, between Salt Lake City, a municipal corporation and the Utah Oil Refining Company, a corporation of Utah, allowing said Utah Oil Refining Company the privilege of having oil refuse carried through proposed drainage canal of proposed drainage district to be established for the purpose of draining the northwestern section of Salt Lake City, as appears of record in my office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of Salt Lake City, Utah, this 6th day of March, A. D. 1935.

(Signed) ETHEL MACDONALD
City Recorder of
Salt Lake City, Utah

(S e a l)

Copy of copy of contract in the Purchasing Department -
Made for: Mr. A. N. Johnson
 Mr. E. S. Holt
 Mr. Burton W. Musser

We also have in the Purchasing Department correspondence between Mr. W. H. Lovesy, Mr. E. S. Holt, Mr. Page and the Salt Lake City Corporation, regarding the first installment of \$5,000.00. Also correspondence regarding our denial in allowing Oregon Short Line Railroad Company permission to connect a drain to our sewer line.

BP Amoco



BP Amoco

Former Casper Refinery
Post Office Box 160
Casper Wyoming 82602

August 23, 1999

U.S. Environmental Protection Agency
David L. Broste
Technical Enforcement Program, 8ENF-T
999 18th Street, Suite 500
Denver, CO 80202-2466

Re: Additional Response to Request For Information Pursuant to Section 104 of
CERCLA for the Northwest Oil Drains Site Located in Salt Lake County, Utah.

Dear Mr. Broste:

BP Amoco is enclosing an additional document pertaining to the Northwest Oil Drain Canal, which was discovered subsequent to our original Section 104 submittal to EPA on July 1, 1999. This document was found by an Amoco Oil Company employee, Lamar Selman and would apply to Question No. 9 of the information request. BP Amoco is unaware of any other details related to this document.

If you have any questions please contact me at (307) 261-4211.

Sincerely,

A handwritten signature in cursive script that reads 'Joe Deschamp'.

Joe Deschamp
Environmental Business Manager

Enclosure

cc: Joe Naccache, w/o enclosure
Ron Ganim, w/o enclosure

Sept. 12th, 1922.

Utah Oil Refining Company,

John C. Howard, President.

Gentlemen:-

At a meeting of the Board of Commissioners held September 12th, 1922, an agreement by and between your company and the City of Salt Lake for the privilege of having drainage water carrying oil refuse carried and disposed of by and through drainage canal to be build by the city in proposed drainage district in the northwestern section of the City, was approved and the Mayor and City Recorder were authorized to execute same in behalf of the City.

Copy to
Street Dept.
City Engineer-2- ✓

Respectfully,

W. B. Latham
City Recorder.

John C. Howard
Sept 14 1922

Engineering Department
REFERRED TO
SEP 14 1922
FILE
Salt Lake City, Utah.

47-D-2
47-D-2

August 22, 1922.

Mr. W. B. Loveasy,
Traffic Mgr. Utah Oil Refining Co.,
City.

Dear Sir:-

Since discussing with you the matter of negotiations relative to the City's taking care of the oil and refuse water from your refinery, the Board of Commissioners have had prepared a proposed agreement, of which I am enclosing a copy for your consideration.

Will you give the proposition your prompt attention and advise me as soon as possible of your action in the matter.

Very truly yours,

SQC:LJ

CITY ENGINEER.

FILE

47-0-9

A G R E E M E N T .

THIS AGREEMENT, made and entered into this ____ day of _____, A.D. 1922, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established, for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal,

NOW, THEREFORE, in consideration of the premises, and for the sum of \$1.00 in hand paid by each of the parties hereto to the other, and of other valuable considerations passing between the parties hereto, the receipt of which is hereby acknowledged, it is understood and agreed by and between the parties hereto that the party of the second part shall pay to the party of the first part, the sum of \$20,000.00 payable in four installments of \$5,000.00 each; the first installment to be paid on or before three months after construction work commences on the above referred to drain canal; the second installment of \$5,000.00 to be paid not before three months thereafter, and when construction work has been one-fourth completed; the third installment of \$5,000.00 to be paid not before three months after said second installment has been paid, and when one-half

shall be paid not before three months after the third installment has been paid, and at the time of the completion of the entire construction work; provided, however, that the first installment hereinabove mentioned shall not become due and payable to the first party by the second party unless said first party commences, and with reasonable diligence continues, the construction of said drain canal; and in consideration of said payment by the party of the second part to the party of the first part, said party of the first part shall construct, or cause to be constructed, said drain canal, and shall therein provide sufficient capacity, above its own need, to carry the amount of water now being discharged by the party of the second part from its refinery and environs, or a total of six second feet; and said party of the first part agrees to carry the sewerage and waste-water of the party of the second part through said drain canal and dump the same into Great Salt Lake perpetually, unless said parties, or either of them, are restrained or otherwise prevented by legal proceedings from carrying said waters and discharging same into the Great Salt Lake, or some other suitable place.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further agreed for the same considerations hereinabove mentioned, that the party of the second part shall have the right to discharge into the present sewer

drain canal not to exceed 300,000 gallons of its waters
from its refinery per day.

IN WITNESS WHEREOF, the parties hereto have caused
this agreement to be executed by the appropriate officers
of each on the day and year first above written.

SALT LAKE CITY,

By _____
Mayor.

Attest:

City Recorder.

UTAH OIL REFINING COMPANY,

By _____
President.

Secretary.

Original letter from New State Inn Club

Mr. W. H. Loveasy,
Traffic Mgr. Utah Oil Refining Co.,
City.

Dear Sir:-

Since discussing with you the matter of negotiations relative to the City's taking care of the oil and refuse water from your refinery, the Board of Commissioners have had prepared a proposed agreement, of which I am enclosing a copy for your consideration.

Will you give the proposition your prompt attention and advise me as soon as possible of your action in the matter.

Very truly yours,

SQC:LJ

CITY ENGINEER.

FILE

47-D-2

A G R E E M E N T .

THIS AGREEMENT, made and entered into this ____ day of _____, A.D. 1922, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established, for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal,

NOW, THEREFORE, in consideration of the premises, and for the sum of \$1.00 in hand paid by each of the parties hereto to the other, and of other valuable considerations passing between the parties hereto, the receipt of which is hereby acknowledged, it is understood and agreed by and between the parties hereto that the party of the second part shall pay to the party of the first part, the sum of \$20,000.00, payable in four installments of \$5,000.00 each; the first installment to be paid on or before three months after construction work commences on the above referred to drain canal; the second installment of \$5,000.00 to be paid not before three months thereafter, and when construction work has been one-fourth completed; the third installment of \$5,000.00 to be paid not before three months after said second installment has been paid, and when one-half

shall be paid not before three months after the third installment has been paid, and at the time of the completion of the entire construction work; provided, however, that the first installment hereinabove mentioned shall not become due and payable to the first party by the second party unless said first party commences, and with reasonable diligence continues, the construction of said drain canal; and in consideration of said payment by the party of the second part to the party of the first part, said party of the first part shall construct, or cause to be constructed, said drain canal, and shall therein provide sufficient capacity, above its own need, to carry the amount of water now being discharged by the party of the second part from its refinery and environs, or a total of six second feet; and said party of the first part agrees to carry the sewerage and waste-water of the party of the second part through said drain canal and dump the same into Great Salt Lake perpetually, unless said parties, or either of them, are restrained or otherwise prevented by legal proceedings from carrying said waters and discharging same into the Great Salt Lake, or some other suitable place.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit, that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further agreed for the same considerations hereinabove mentioned, that the party of the second part shall have the right to discharge into the present sewer

drain canal not to exceed 300,000 gallons of its waters
from its refinery per day.

IN WITNESS WHEREOF, the parties hereto have caused
this agreement to be executed by the appropriate officers
of each on the day and year first above written.

SALT LAKE CITY,

By _____
Mayor.

Attest:

City Recorder.

UTAH OIL REFINING COMPANY,

By _____
President.

Secretary.

Original letter from West State Iron Club

ROLL CALL

1922

Salt Lake City, Utah, Sept. 12, 1922

VOTING	AYE / NAY
Barnes	X /
Burton	X /
Green	X /
Stewart	X /
Mr. Chairman	X /
Result	

I move that the accompanying agreement with the Utah Oil Refining Company for the privilege of having its drainage water carrying oil refuse carried and disposed of by and through drainage canal to be built by the city in proposed drainage district in the northwestern section of the City, be approved and the Mayor and City Recorder authorized to execute same in behalf of the City

S/ T. T. Burton

Commissioner of Streets and Public Improvements

Passed by the Board of Commissioners of Salt Lake City, Utah Sep. 12, 1922

s/ W. A. Leatham
City Recorder

s/ C. C. Neslen
Mayor

T. J. BURTON
COMMISSIONER OF STREETS
AND PUBLIC IMPROVEMENTS

SALT LAKE CITY CORPORATION

SALT LAKE CITY, UTAH

Sylvester Q. Cannon,

City Engineer,

Dear Sir:

I am attaching hereto a copy of agreement prepared by the City Attorney between us and the Utah Oil Refining Company, and tentatively agreed to by the Commission. If possible would like to have you take this matter up with the Refining Company and see if they are willing to accept same. You will notice that this provides for the perpetual care of the water until restrained and merely makes provision in case of being compelled to conduit.

Yours Very Truly,

T. J. Burton
Commissioner of Streets
and Public Improvements.

Engineering Department
REFERRED TO
AUG 21 1922
FILE
Salt Lake City, Utah

A G R E E M E N T

THIS AGREEMENT, made and entered into this _____ day of _____, A.D. 1922, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established, for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal.

NOW, THEREFORE, it is understood and agreed by and between the parties hereto that party of the second part shall pay to the party of the first part the sum of Twenty Thousand and 00/100 (\$20,000.00) dollars, payable in the installments of Five Thousand and 00/100 (\$5,000.00) dollars each, first payment to be paid at the end of three months after construction work has commenced, and other payments to be made each three months thereafter until fully paid, and in consideration thereof said party of the first part shall provide sufficient capacity in said canal to carry twice the amount of water now being discharged by party of the second part, or a total of six second feet, and said party of the first part shall carry said water through said drain canal to Great Salt Lake, and said parties, their heirs, assigns, and legal representatives, are restrained and prevented from carrying said water, or discharging the same, into Great Salt Lake.

It is further understood and agreed that party of the second part shall hold party of the first part harmless, and on account of any damages which may be assessed against it in any court proceedings, or otherwise, on account of the discharge of

said drainage ditch, coming from said second party.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further agreed that in consideration of said payment to be made as aforesaid, party of the second part may *(not to exceed 300,000 gallons daily of)* discharge its waters from its refinery into the sewer of said first party, *pending completion of said drain canal.*

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by the appropriate officers of each on the day and year first above written.

SALT LAKE CITY,

By _____
Mayor.

Attest:

City Recorder.

UTAH OIL REFINING COMPANY,

By _____
President.

Secretary.

SALT LAKE CITY CORPORATION

T. T. BURTON
COMMISSIONER OF STREETS
AND PUBLIC IMPROVEMENTS

SALT LAKE CITY, UTAH

August, 18th. 1922.

Sylvester Q. Cannon,

City Engineer,

Dear Sir:

I am attaching hereto a copy of agreement prepared by the City Attorney between us and the Utah Oil Refining Company, and tentively agreed to by the Commission. If possible would like to have you take this matter up with the Refining Company and see if they are willing to accept same. You will notice that this provides for the perpetual care of the water until restrained and merely makes provision in case of being compelled to conduit.

Yours Very Truly,

T. T. Burton
Commissioner of Streets
and Public Improvements.

Engineering Department
REFERRED TO
AUG 21 1922
<i>ELL</i>
Salt Lake City, Utah

A G R E E M E N T

THIS AGREEMENT, made and entered into this _____ day of _____, A.D. 1922, by and between SALT LAKE CITY, a municipal corporation of the State of Utah, party of the first part, and UTAH OIL REFINING COMPANY, a corporation of Utah, party of the second part, WITNESSETH:

THAT WHEREAS, Salt Lake City contemplates the building of a drain canal, either itself or in connection with a drainage district to be hereafter established, for the purpose of draining the northwestern section of Salt Lake City; and

WHEREAS, the party of the second part is desirous of having its drainage water carrying oil refuse carried and disposed of by and through said drainage canal.

NOW, THEREFORE, it is understood and agreed by and between the parties hereto that party of the second part shall pay to the party of the first part the sum of Twenty Thousand and 00/100 (\$20,000.00) dollars, payable in the installments of Five Thousand and 00/100 (\$5,000.00) dollars each, first payment to be paid at the end of three months after construction work has commenced, and other payments to be made each three months thereafter until fully paid, and in consideration thereof said party of the first part shall provide sufficient capacity in said canal to carry twice the amount of water now being discharged by party of the second part, or a total of six second feet, and said party of the first part shall carry said water through said ditch to the _____, said ditch being perpetually unless said party of the first part is restrained or otherwise prevented by legal proceedings from carrying said water or discharging the same through the _____ Salt Lake.

It is further understood and agreed that party of the second part shall hold party of the first part harmless for and against all claims or any damages which may be assessed against it in any court proceedings, or otherwise, on account of the discharge of

said drainage ditch, coming from said second party.

It is further understood and agreed that if party of the first part is ever compelled by legal proceedings, or otherwise, to place said ditch or canal in conduit that said party of the second part shall at that time pay its proportionate cost of said conduit in proportion to amount of water and refuse carried.

It is further agreed that in consideration of said payment to be made as aforesaid, party of the second part may discharge ^(not to exceed 300,000 gallons daily of) its waters from its refinery into the sewer of said first party, pending completion of said drain canal.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by the appropriate officers of each on the day and year first above written.

SALT LAKE CITY,

By _____
Mayor.

Attest:

City Recorder.

UTAH OIL REFINING COMPANY,

By _____
President.

Secretary.

July 10, 1922

Salt Lake City, Utah, ~~July 10, 1922~~

Honorable Mayor and Board of Commissioners,
Salt Lake City, Utah.

Gentlemen:

In view of the fact that there has been considerable complaint on the part of the New State Gun Club that the water which we are discharging into the 7th West Street ditch, which finds its way into Jordan River, contains a considerable amount of refuse oil which, according to their statements, is causing serious damage to their duck club grounds, and in order to permanently avoid discharging this water into Jordan River, we desire to submit the following proposition to the City:

We understand that the City is considering, in connection with others, the construction of a separate drain channel to Great Salt Lake. In consideration of the City undertaking to provide sufficient capacity for twice the amount of water which we are now discharging into the ditch above named, or about 4 second feet, and agreeing to carry this water through the said ditch so that it will not cause damage to said Gun Club or other parties, and assuming all responsibility and expense for the carriage of the same, we agree to pay Salt Lake City within one year from date the sum of Twenty-Thousand (\$20,000) and no/100 Dollars, with the understanding that this amount shall be payable in sums not exceeding Five Thousand (\$5,000) and no/100 Dollars at the end of each three months, provided the construction work on this drain channel shall have been undertaken before the first payment is made.

Respectfully,

Wm L Oil Refining Co

FILE

July 6, 1922.

Honorable T. T. Burton,
Commissioner of Streets & Public Improvements,
Salt Lake City, Utah.

Dear Sir:

I am informed by Messrs. Kleinschmidt and Stratton that they are desirous of submitting a new or supplemental petition to the Board of County Commissioners for the formation of Drainage District #2 in the northwestern portion of the City and County, for which the original petition was submitted in 1920, which petition was signed by the City.

The purpose of the supplemental petition appears to be to specify that the drainage to be undertaken under this district organization is simply the provision for main drain channels only. They have requested that I advise you in relation to this matter.

The district as proposed will cover the territory North of 9th North Street on the West side of the River and from about one-half mile North of 9th North on the East side of the River; from about Beck Street on the East to about 2 or 3 miles West of the River on the West. The North boundaries would be along the line of the Sewer Farm East of the River and a mile North of the Sewer Farm on the West side of the River. This district, as proposed, will include all of the City's lands known as the Sewage Farm, for which the City would pay its proportion, the same as any other land owner, for the drainage. This district would not, of course, necessarily include any provision for additional surface water to be turned in by the City from a point South of the South limits specified, or for the making of the Sewage water in case that were considered desirable. Any arrangements of this kind would have to be made later on with the supervisors of the district.

Since the Board of Commissioners have already authorized the signing of the original petition indicating their desire to have the City's lands drained, it would appear that there is no reason why they should not agree to the supplemental petition as proposed.

Respectfully,

Salt Lake City, Utah, July 10, 1922.

Honorable Mayor and Board of Commissioners,
Salt Lake City, Utah.

Gentlemen:

In view of the fact that there has been considerable complaint on the part of the New State Gun Club that the water which we are discharging into the 7th West Street ditch, which finds its way into Jordan River, contains a considerable amount of refuse oil which, according to their statements, is causing serious damage to their duck club grounds, and in order to permanently avoid discharging this water into Jordan River, we desire to submit the following proposition to the City:

We understand that the City is considering, in connection with others, the construction of a separate drain channel to Great Salt Lake. In consideration of the City undertaking to provide sufficient capacity for twice the amount of water which we are now discharging into the ditch above named, or about 4 second feet, and agreeing to carry this water through the said ditch so that it will not cause damage to said Gun Club or other parties, and assuming all responsibility and expense for the carriage of the same, we agree to pay Salt Lake City within one year from date the sum of Twenty-Thousand (\$20,000) and no/100 Dollars, with the understanding that this amount shall be payable in sums not exceeding Five Thousand (\$5,000) and no/100 Dollars at the end of each three months, provided the construction work on this drain channel shall have been undertaken before the first payment is made.

Respectfully,

W. H. Oil Refining Co.

FILE

To: The Honorable Mayor Ted Wilson

~~XXXXXXXXXXXX~~

Councilman Ronald Whitehead, District #1

Subject: Summary of file 47-D-2 City Engineer

Date

Sept. 12, 1922

Agreement between SLC and Utah Oil Refining Company
on use and construction. Liability clause in contract.

of canals.

Jan 25, 1926

To: P.J. Moran, Commissioner of Streets
From: Acting City Engineer (HCJ)

"For a number of years the Utah Oil Refining Company has
been discharging into the Gravity Outlet Sewer about
300,000 gallons of water (oily and industrial waste)
from its refinery per day."

Aug 2, 1926

To: H.C. Jessen City Engineer ~~W.D. Beers~~
From: L. Tanner (association unknown)

"The following is a report of the investigation of the
complaint of the Jordan Investment Company....."

%0%#p000 Comments: no report attached.

"The drain ditch to the south of the drainage channel
was enlarged and deepened....." "The drain ditch to
the north was not filled but left open....."

"The sewage is a drawback to this district, but the
drainage channel carries the oil, and refuse from the
Utah Oil and Oregon Short Line North Yards to the lake
where formerly the oil was turned into a slough near
the center of Section 10, and during high water this
oil was spread over the land making a menace to this
section of the country.

comments: Section 10 is just north of the Fairgrounds.

Sept. 9, 1927

To: P.J. Moran, Commissioner of Streets
From: City Engineer (HCJ)

"the main canal at high stages overflows its
west bank...."

"Jordan Fur & Reclamation complained that part of
their land is being damaged by the sewage & oil
waste....."

Nov 8, 1949

To: E.R. Christensen, City Attorney
From: City Engineer

"Several years ago (about 1939) your office borrowed
our files on the Salt Lake County Drainage District
#2. Mr. Romney was assigned to this job by your office.
The records were not returned to this office. "

Nov. 15, 1946

To: W.D. Beers City Engineer
From: Christensen, City Attorney

" I thought the file had been returned. It is a large file and could not be lost."

Nov. 14. 1949

Nov 21, 1949

Nov. 14, 1949

Nov. 28, 1949

To: Matheson, Commisioner
From: City Engineer (copy unsigned) (MNM)
reference to "oily acid wastes....."

To: Utah Ice and Storage
From: City Engineer

" An investigation is being made by the City of water being discharged into the City drains in the northwest part of the City....."

"The information we require is as follows: Source of water, whether City or from wells, waste products carried by water, temperature at point of discharge, quantity discharged, steady or intermittent flow, length of time such discharge has been made, and whether or not an agreement exists between your Company and the City.

We would appredate your cooperation in furnishing the above requested information this week, so that it m ay be incorporated in a report now being prepared by this office."

Comment: no record of report and no record of the same information being requested of other industries.

Preliminary Report on Drainage Pipe Lines for Northwest Part of City.

"The area north of 9th north and west of 8th west is being considered for extensive development, which means that troublesome wastes now being carried in open drains must either be excluded from the drains or carried in pipe lines to a point beyong expected development. The sulphur water and oily wastes must be carried in a pipe which will not be disintegrated by their chemical action."

To: John Matheson, Commissioner of Streets
From: City Engineer

regarding flow estimates:

Utah Oil Refinery: 16,000 gallons/day

Union Pacific 6400 gallons/day

Jan 19, 1950

To; Roy McLeese

From: M. McKendrick, Assistant Engineer of Sewers

".....no meeting has been held with (Salt Lake) Refinery representatives since the letter was received from them , but waste water is now being discharged from the refinery into the City drain canal."

Feb 8, 1950

To: C.E. Finney, Jr. President Salt Lake Refinery Co.

From: City Engineer

" I am informed that you have availed yourself of this drainage canal."

Aug 24, 1950

To: Edward Holmes, Alan Brockbank, Union Pacific, Utah Oil Refinery

From: City Engineer (LWM)

"meeting"... "for the purpose of further discussing the drainage ditch problem."

To: Ray Christensen, City Attorney

From: City Attorney

".....to discuss further the problem confronting the Commission regarding drainage of the Northwest area of the City."

"All information or reports regarding this project should be reviewed and ready for presentation to this group at the meeting."

Comment: no copy of ~~the~~ reports.

Oct. 2, 1950

To: Utah Ice & Storage

From: Commissioner of Streets (LWM)

"The present open drain in this area is at present a nuisance and emits very pungent odors."

Oct. 13, 1950

Record of Meeting Oct. 10. 1950

Cost of filling the drainage canals of the Northwest Area to the Real Estate Promoters: \$25,300.

Oct. 2, 1950

To: J.B. Davis, Chief Engineer

From: Commissioner of Streets (LWM)

"Because of the urgency of this matter the next meeting....."

May 3, 1951

To: Roy McLeese

From: Lynn Thatcher, Director, Division of Sanitary Engineering.

Bill Cleff using drainage ditches for irrigation.

April 12, 1951

To: Lynn Thatcher, Director, Division of Sanitary Engineering.

From: Roy McLeese, City Engineer

"Waste water from Cudahy Packing Plant ~~%%~~ is being diverted northwesterly through the abandoned gravity sewer canal and this diversion is not authorized by the city."

May 23, 1951

To: Roy McLeese, City Engineer

From: ~~##~~ LWM, City Engineer

".....which has been causing so much trouble with oil and fumes from discharge waste, particularly from the Utah Oil Refining Company and the Union ~~##~~ Pacific Railroad Company."

May 25, 1951

To: Joe Christensen, Commissioner of Streets

From: Roy McLeese, City Engineer

"Because of the urgency of doing something to alleviate this nuisance,....."

July 31, 1951

To: Union Pacific Railroad

From: Commissioner of Streets (LWM)

"This problem has reached a point where something must be done and the solution must be worked out soon to grant ~~\$\$\$\$\$\$~~ relief to a very obnoxious and bad condition, therefore, a meeting is hereby called....."

Aug 14, 1951

To: Union Pacific Railroad

From: Roy McLeese, City Engineer

".....to alleviate a very obnoxious and bad drainage condition now in existence."

"Because of the obnoxious odors, the fine spray of oil on adjacent houses on 9th North Street in the vicinity of this ditch numerous complaints are received by the City, and something must be done to correct this condition. We have discussed this matter and feel that those causing the nuisance should pay proportional costs and further that the work shall be done as soon as possible."

"The nature of the waste drainage from the Utah Oil Company will necessitate the painting of the pipe to

limit the attack on the concrete pipe...."

Sept. 24, 1951

To: Roy McLeese, City Engineer

From: Union Pacific Railroad

letter disagrees with proportioned costs to the industries involved.

"Second, we doubt that the City has requested other property owners or industries to contribute such a large proportion of the cost in similar projects under circumstances where no corrosive liquids are discharged into a sewer system by such property owners or industries, as is the case with the Union Pacific no.w.

"Third, it seems to us that those who will benefit most from the proposed project are the real estate promoters

".....the solution now suggested is obviously inadequate to solve the problem permanently."

March 11, 1952

To: Union Pacific Railroad

From: Roy McLeese, City Engineer

"....at the above meeting to discuss this serious problem ~~the~~ confronting Salt Lake City in the matter of eliminating an existing nuisance created by the type of waste now ~~is~~ flowing in this open ditch....."

"This created nuisance and accompanying odors are the source of many complaints from property owners in the area and we feel that something must be done."

January 3, 1952

To: Utah Oil Refining Company

From: Roy McLeese, City Engineer

".....you are aware of the petition for rezoning this area....."

August 1952
(undated)

Agreement between Salt Lake City and Utah Oil Refining Company.

Agreement stipulates further usage or and plans for ~~the~~ the new pipeline to carry industrial waste and sewage.

"WHEREAS, it now appears that numerous and diverse residents living west of the Oil Company's property and nearby the aforementioned drain are complaining that fumes and disturbing odors are carried into their homes to the annoyance and discomfort of all concerned, and said residents are threatening to

~~\$\$\$%\$\$\$%\$\$\$%~~

sue to have the Oil Company

enjoined from continuing to transport the waste materials from its refinery through an open channel; and...."

Aug 8, 1952

To: Joe Christensen, Commissioner of Streets

From: Roy McLeese, City Engineer

% "In view of the urgency and necessity of abating this nuisance is is my recommendation....."

Aug 14, 1952

To: A.D. Hansen, Union Pacific Railroad

From: Roy McLeese, City Engineer

"......regarding this bad situation which we all feel should be abated....."

Dec. 23, 1952

To: Roy McLeese, City Engineer

From: Gale D. Smith, Chairman
Rose Park Residents Committee

~~#####~~

"As Chairman of the Residents Committee of Rose Park, I want to take this opportunity of expressing our %\$\$\$% sincere thanks and appreciation to you personally for eliminating this obnoxious situation from our area."

Comment: penciled in at bottom of copy of letter are the words "follow thru with BRM for filling ditch , etc."

List of Industries using the drainage system (incomplete)

Jordan Fur & Reclamation

Utah Refining Company

Utah Ice & Storage Company

Union Pacific Railroad

Cudahy Packing Plant

Salt Lake Refinery

Oregon Short Line Railroad

"Old Copper Plant"

others as yet to be discovered

f MOC